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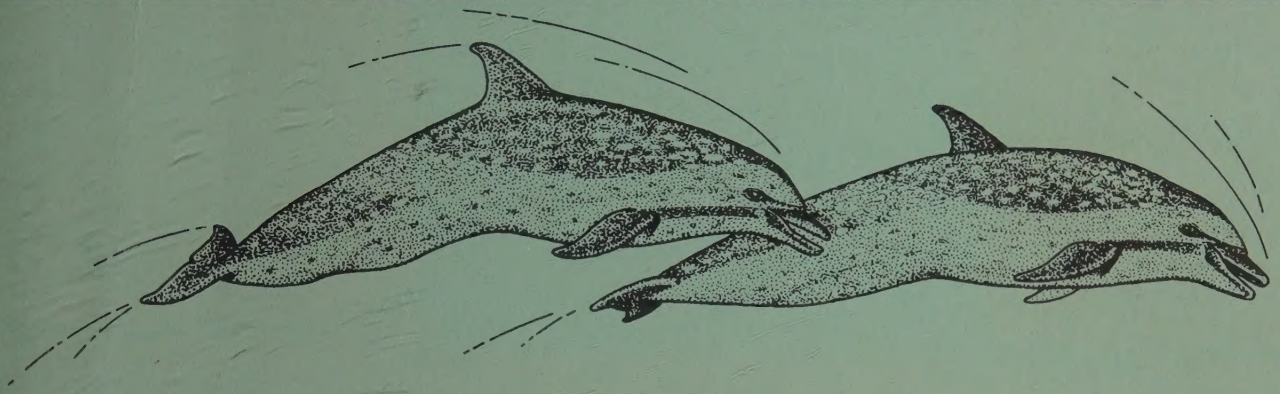
Administration Of The Marine Mammal Protection Act Of 1972

U. S. DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration · National Marine Fisheries Service



Report To The Congress On The Research And Development Program To Reduce The Incidental Take Of Marine Mammals

October 21, 1972 Through October 20, 1974

THE SECRETARY OF COMMERCE
Washington, D.C. 20230

OCT 21 1974

President Pro Tempore of the Senate
Speaker of the House of Representatives

Sirs:

I have the honor to transmit herewith the report of the Department of Commerce on the program of research and development authorized and directed by Section 111(a) of the Marine Mammal Protection Act of 1972 (16 U.S.C. 1381(a)). This program, undertaken through the National Oceanic and Atmospheric Administration (NOAA), was intended to develop improved fishing methods and gear which would reduce, to the maximum extent practicable, the taking of marine mammals incidental to commercial fishing.

In connection with the research and development program required by Section 111(a), related work was accomplished by an element of the National Marine Fisheries Service, NOAA, on porpoise populations and biological research. A review of this related work for scientific validity by committees of scientists both within and outside the National Marine Fisheries Service, NOAA, as well as the Marine Mammal Commission, is under way.

Due to the widespread interest in, and the potential significance of possible actions which might be taken with respect to this matter, a public hearing is being scheduled for a date in late November. The purpose of the hearing is to receive and consider comments on possible changes, if any, in the existing incidental taking regulations governing commercial fishing operations (50 CFR 216.24) which may be required as a result of all the information available.

A supplemental report will be officially transmitted to the Congress on this matter as soon as possible after the public hearing.

Sincerely,

Secretary of Commerce

Enclosure

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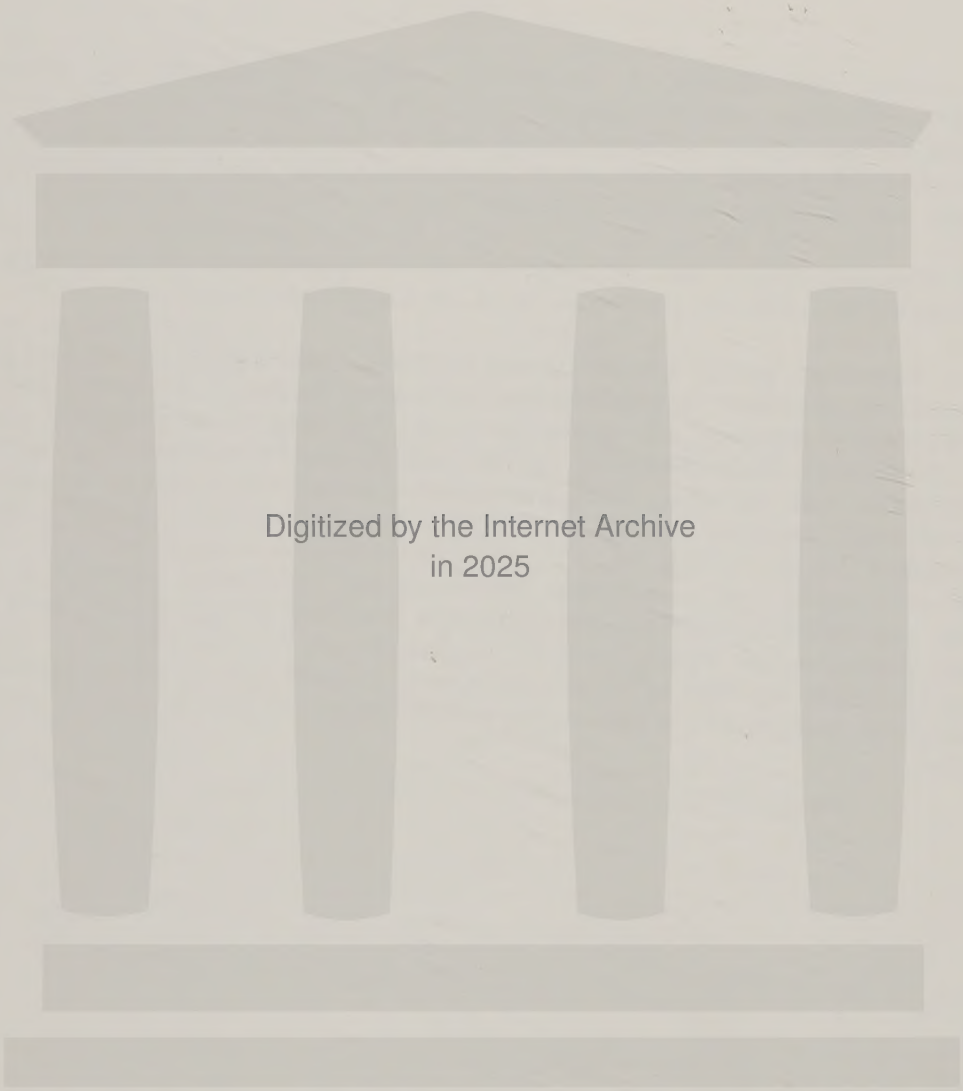
ABSTRACT

Under provisions of the Marine Mammal Protection Act, research on the dynamics and development of fishing methods and gear which would reduce the incidental kill and serious injury of porpoise in the yellowfin tuna purse seine fishery in the eastern tropical Pacific Ocean was started by the National Marine Fisheries Service in late 1972. Prior to this, the U.S. tuna fleet, recognizing the problem, had developed gear and techniques which appeared to be of value in reducing incidental porpoise kill and serious injury.

Based on early observations by NMFS investigators on the apparent causes of porpoise mortality in the purse seine, a research and development program was undertaken at the Southwest Fisheries Center to find immediate remedial technological means of reducing such mortality and injury. Those measures, among many others considered, which hold promise toward achieving this reduction, are 1) a newly-designed large-volume net, 2) torque-balanced purseline, and 3) the use of speedboats to prevent imminent net collapse. NMFS and industry gear and methodological developments are being introduced into the tuna purse seine fleet on a trial basis, or by regulation. Statistical verification of the efficacy of these technological improvements in reducing incidental kill of porpoise requires further observational data.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I. INTRODUCTION

A little understood relationship exists between some species of porpoise and yellowfin tuna. The porpoise and yellowfin tuna frequently travel together in the eastern tropical Pacific Ocean. American tuna fishermen have long known of this relationship, and have made use of it in the search and detection phase of their fishing operations. In the early 1960's, as most of the U.S. fleet converted from pole and line to purse seine fishing, it became evident that by directing the movements of the porpoise, the movements of the tunas which followed the porpoise could also be controlled so as to make them more susceptible to capture by the purse seine. Techniques were gradually developed by the U.S. purse seine fleet to herd and capture porpoise and their associated tuna.

However, the capture of porpoise in the net with the yellowfin tuna created several problems. In the context of this report, the primary problem was porpoise mortality resulting from entanglement and trapping in the purse seine. In addition, captured porpoise could not be removed easily or released from the net without risking the loss of the tuna. Porpoise in the net reduced the efficiency of the purse seining operations. Porpoise trapped in the net created safety hazards for the fishermen during the hauling process. Concern with these problems has led to action by industry, government, and the public on several fronts.

II. ACTIONS TO TREAT THE TUNA-PORPOISE PROBLEM

As the problems related to the purse seine fishery for yellowfin tuna associated with porpoises became increasingly evident, efforts were made by a number of concerned groups within the United States to deal with them. Some actions were concurrent and some overlapping; all were positive attempts to understand the nature and extent of the problem, and to reduce the incidental kill and serious injury of the porpoises.

A. U.S. tuna fleet/industry efforts

U.S. tuna fishermen have long recognized the importance of reducing the incidental kill of porpoise occasioned by the purse seine fishery, and of maintaining viable porpoise populations. They took direct action in developing porpoise rescue methods, have established training workshops for disseminating these methods, have cooperated with Southwest Fisheries Center (SWFC) scientists in research activities, and have contributed extensive advice and knowledge toward attainment of the Center's research objectives.

A successful rescue method developed by the U.S. fleet has been the backdown maneuver (Appendix A). A second important improvement by U.S. fishermen was the development of the "Medina panel" -- a small-mesh panel inserted in the net's backdown area to reduce porpoise mortality (Section III). The fleet has also introduced the use of a net tender skiff at the backdown area to assist in removing porpoises from the net (Section III).

Under the auspices of the American Tunaboat Association (ATA), National Marine Fisheries Service (NMFS) program personnel participated in a series of meetings with skippers, fishermen, and boat owners and managers as part of their efforts to reduce the kill of porpoises. Progress in NMFS gear developments has been presented, and suggestions received and exchanged with the fishermen. The major part of the program has been devoted to an open discussion among fishermen on rescue methods and techniques to reduce porpoise mortality. Six such meetings have so far been conducted by the ATA.

In addition, representatives of the various elements of the tuna industry, including packers, boat owners and managers, boat captains, and fishermen's union representatives met with SWFC management to consult and contribute their ideas to the gear development and observer components of the program. Four such meetings were held in 1973. Members of the group changed for various meetings and a total of 31 invitees took part. Spokesmen for the ATA played a prominent role in these meetings.

B. The National Oceanic and Atmospheric Administration (NOAA) Tuna-Porpoise Review Committee

In May 1972, in response to increasing concern regarding the general welfare of porpoise populations, an ad hoc review and advisory committee comprised of a mix of NOAA, NMFS, and academic fisheries experts with different but pertinent specialties was formed by the U.S. Department of Commerce. This "Porpoise Committee" was charged to review early research findings and then, 1) to assess the state of knowledge of the relationship among the various porpoise populations and the tuna purse seine fishery, and 2) to delineate the scope, direction, and priority of future research on the problem.

By early September, a report on the Committee's findings was produced (NOAA Tuna-Porpoise Review Committee, 1972). From its review of technological developments, it was concluded that the most significant was the Medina panel. Preliminary results suggested that its use could achieve a substantial reduction in porpoise mortality in those cases where the seining operation proceeded in normal fashion to the backdown maneuver. Its adoption by the entire U.S. fleet was urged.

The Committee strongly recommended an increased effort for a 2-year period in the marine mammal program at the SWFC, with highest priority given to investigating the technological means of reducing porpoise mortality in the fishing process and to understanding the associated behavioral aspects. The Committee cautioned that, to insure their adoption, the technological developments must lead to practical fishing systems and counseled close cooperation with the U.S. tuna industry on this aspect of the work. A training program for fishermen was recommended. To carry out these tasks, the Committee urged the recruitment of additional personnel and outlined a 1-year working budget.

C. The Marine Mammal Protection Act (MMPA)

No lengthy interpretation of the MMPA of 1972 (16 U.S.C. 1361, 86 Stat. 1027, 1972) is intended here, for the law's basic intent in quite clear. "Marine mammals should be encouraged to develop to the greatest extent feasible commensurate with sound resource management. . . ."

The law decreed, with a few exceptions, a total moratorium on exploitation of these animals. Incidental take in commercial fisheries was allowed to continue for a 2-year period subject to interim regulations. In essence, the Act states that those fisheries that cause incidental mortality and serious injury to marine mammals could continue to operate, but that their fishing methods must be conducted in accordance with provisional regulations designed to produce the least practicable hazard to mammals. Further, the industry should strive towards a goal of reducing marine mammal mortality and serious injury to insignificant levels approaching a zero rate. At the end of the 2-year period, permits could be issued for continued fishing under specified rules and regulations.

D. Research by the National Marine Fisheries Service (NMFS)

Jurisdiction for administering the provisions of the MMPA was divided between the U.S. Departments of Commerce and Interior. The Department of Commerce has responsibility for cetaceans and pinnipeds (whales, porpoises, seals, and sea lions). The Department of the Interior was given authority for sea otters, walruses, polar bears, and manatees -- for which they have been historically responsible.

Within the Department of Commerce, responsibility for oceanic marine mammals resides in NOAA and has been delegated to the NMFS.

The history of the NMFS' involvement with the porpoise-tuna problem predates the MMPA. Beginning in 1964, scientists at the SWFC, working in cooperation with the tuna fishing fleet, had begun to study the problem, and by 1972 a considerable amount of information on porpoise mortality and its causes had been gathered.

In late 1972, a major formal research program was started at the SWFC. Administratively, the program was divided into two areas: 1) gear dynamics and development, and 2) biology and stock assessment. Recruitment and reassignment of personnel to the program was completed by April 1973, and with the exception of the population dynamics component, continuity of personnel has been relatively stable. The Northwest Fisheries Center (NWFC), working in collaboration with the SWFC, contributed much of the expertise in the gear dynamics program. The approximate manpower effort devoted to the various tasks at the SWFC since the passage of the MMPA is given in Appendix C.

The approximate direct funding at the SWFC of the various task components for the FY 1973-1974 period, and the projected expenditures for FY 1975 are also shown in Appendix C.

In addition to NMFS funds, other resources have been invested in the program. Under the Convention for the Conservation of Tunas in the eastern tropical Pacific Ocean, provision is made for the taking of yellowfin tuna beyond the established quota by a member country for research purposes. In 1973, the NMFS used 1,000 tons of yellowfin tuna under this provision to support two porpoise gear research cruises. A similar arrangement has been made for two gear cruises in the fall of 1974. The Behavioral Studies task was augmented by $11,000 from the Navy Undersea Center's independent research funds, and marine mammal specialists from that laboratory have aided in certain aspects of the work.

In certain cases, either because of the lack of in-house expertise and time, or because of the desirability of using special talents and facilities, it was advantageous to contract for specific research tasks. Contracts for construction of a tuna purse seine were also negotiated. The contracting agencies, the investigators, their research topics, and the funding are given in Appendix D.

As required by Section 111(a) of the MMPA, we submit the following progress report on that portion of the SWFC's work to date relating to research and development of improved fishing methods and gear designed to reduce, to the maximum extent practicable, the incidental mortality of porpoises in the tuna purse seine fishery. Other research activities at the SWFC on the biology and population of porpoise are also in progress. No work has been undertaken on the incidental take of marine mammals in other fisheries.

III. REDUCING INCIDENTAL KILL

A. Introduction

The intent of the NOAA Tuna-Porpoise Committee recommendations was that technological developments and fishing strategies that could eliminate or significantly reduce porpoise mortality incidental to the tuna purse seine fishery should be conducted in two phases.

Phase one was conceived as a short-term approach to supplement existing industry methods. Any modifications were to be practical and to contribute to the overall efficiency of the fishing operation. The program was to be conducted in close cooperation with the industry.

Phase two was considered as a long-term approach, with emphasis on behavioral studies of porpoise, to devise fishing methods that would either separate the tuna from the porpoise before the net was set around the animals or not involve the herding of porpoise.

Both phases were to begin simultaneously, with the results of phase one being reported on as required by the MMPA at the end of a 2-year period, and phase two continuing until satisfactory results were achieved.

Even though the major portion of program resources were invested in the gear work, it has not been possible to implement fully the directives of the Porpoise Committee. In essence, phase one has been accomplished and is reported here but little progress has been achieved on phase two.

B. Causes of mortality

The SWFC's short-term approaches to developing technologies, both in fishing gear and in methods for reducing porpoise mortalities, were based on observations made early in the program as to what appeared to be the major causes of porpoise mortalities. These first findings (on which remedial measures had already been based) were confirmed by the results of specific observations made during the 1974 season.

The results of 30 fishing trips in 1974 for a total of 877 sets on porpoise are summarized in Table 1. While 10,663 porpoise casualties were noted, direct causes were determined for 73% (7,778) of the deaths. Because of the complexity of the operations, determination of a primary cause of mortality in many cases is a matter of judgement. A large proportion of the animals died when problems developed previous to backdown (Table 1, categories 4, 5, 6, 7, 8, and 11). The total of 4,974 deaths, caused by these six categories accounts for 64% of the deaths for which causes were recorded. The normal rescue procedures accounted for the death of 1,781 animals (23% of the known causes) that became entangled at the far end of the net presumably during the backing down operation. (The boats in this category that killed the fewest porpoise were those that stationed a net tender at the backdown area to untangle animals wrapped in the webbing after backdown.) Failure to attempt or to complete backdown (categories 2 and 3) accounted for almost 1,000 animals or 13% of the known deaths.

Through the years that NMFS observers have been taking data, the overall mortality records show similar trends. The majority of deaths occur in a relatively small percentage of the sets. Collapse of the purse seine (Figure 1) is the principal event that characterizes a high mortality or problem set. In a net collapse, the corklines tend to come together forming canopies of webbing and reducing the open area in which the animals can surface, with attendant high mortality. This usually occurs whenever one or a combination of the following situations exists: 1) adverse current conditions; 2) large catches of porpoise and tuna; or 3) a gear malfunction that prohibits speedy retrieval of the gear.

Other lesser causes identified as contributing to overall porpoise mortality were generally associated with the backing-down process. These were:

1) Failure of a few remaining porpoise to exit from the backdown area after the majority of porpoise had been removed, since frequently the porpoise will swim with the net and refuse to exit;

2) Entrapment of porpoise under canopies of webbing in the backdown area;

3) Variations in backing-down proficiency among vessel operators;

4) Variations in effort to complete backdown among vessel operators, mainly due to the possibility of losing fish; and

5) Basic design of the purse seine.

Table 1. Causes of porpoise mortality (all species) as noted by 1974 observers

Cruise	Entangled in backdown (1)	Killed during sacking up (2)		Trapped under webbing (4)	Severe gear malfunctions in set (5)		(7)	(8)	Died because of darkness (9)	Killed by sharks (10)	"Overcrowded" (11)	NMFS Experiment (12)	"Cause unknown" (13)	Cause not noted (no data) (14)	1/ Total Killed	Sets on porpoise	Tons of YF
		After backdown	No backdown		Net Collapse	Rollup	Net in Rings	Net fouled									
54	39	20	2	6	10								40	15	132	33	446
55	26													38	64	6	15
56	2		7	418		19	11							400	857	34	480
57	295	61	42	41	214	15			14		263			145	1090	68	540
58	65	5		97	30				4	3			1	48	255	56	410
59	34	137			162	135								258	726	55	522
60	92	21		2							273			260	648	50	525
61	82		1	1	107	5			1				4	6	207	62	462
62	2	32		146			78					9		8	275	19	128
63	3	31	8		50									69	161	40	477
64	6		42	125	19	370									562	29	334
65	37		21	117	40								4	34	253	35	625
66	47	54	3	234	9	79				2			13	250	691	53	1234
67				23										355	378	44	314
68	1	146		16	4		9							433	609	30	508
69					34										34	3	24
70	6			111	186			25					3	33	364	32	559
71	36				7	29								27	99	13	152
72	25	2	12	29						2			10	4	84	16	70
73	35		5	99	27	509							28	93	796	36	186
74	780	75		13	36										904	37	855
75	34	31	52		80								6	39	242	29	164
76	11	2		26	23	28				1			1	4	96	29	274
77	83	75		74	73					1			42	36	384	21	211
78	9	59		88	126										252	15	126
80	14	40			24			24							102	6	87
81	1													4	5	4	20
82				34		12								107	153	8	250
86													2	2	4	4	44
87	16			82	47									63	208	30	221
Total	1781	791	195	1782	1308	1201	98	49	19	9	536	9	154	2731	10665	877	8891
%	(16.7)	(7.4)	(1.8)	(16.7)	(12.3)	(12.3)	(0.9)	(0.5)	(0.2)	(0.1)	(5.0)	(0.1)	(1.4)	(25.6)	(100.0)		

1/ Includes only animals known dead. Does not include prorated animals of unknown status.

Figure 1. Collapsed tuna purse seine with school of spotted porpoise entrapped under a canopy of webbing.

C. Technological developments

Analysis of the primary causes of mortality made it clear that the major emphasis in the short-term program had to be given to combatting events that occurred before the backdown stage of the net set was reached. The following sections describe both industry and SWFC actions toward this objective.

In addition to the work described below, numerous devices and techniques for reducing incidental porpoise mortality have been considered, and some have been tested. For various reasons, none has been considered promising as short-term solutions. A list of these suggestions and brief reasons for their rejection are listed in Appendix B.

1. Redesigning the net

(a) Medina panel

In 1971, Captain Harold Medina replaced the 4-1/4-inch mesh in the backdown area of his net with a 720-foot long, 36-foot deep strip of 2-inch webbing, to reduce the chances of porpoises becoming entangled in the mesh during the backdown maneuver. In that year the "Medina panel," as it came to be called by fishermen, was also tested by Captain Joseph Medina, Jr. These highly experienced and skilled skippers concluded that the smaller mesh netting was effective in reducing porpoise mortalities, and by the end of the 1972 fishing season, similar panels had been installed in the nets of approximately 40-50% of the U.S. tuna seiners. Further voluntary adoptions raised the percentage of U.S. nets equipped with such a panel to about 60-70% of the fleet by the end of 1973.

The effectiveness of the Medina (or safety) panel has been the subject of several statistical studies. Based on the early records of NMFS observers, the first such analysis was done by the NOAA Porpoise Committee which concluded that the Medina panel was 36% more effective than standard nets in trouble-free sets and recommended that its use be made mandatory. The interim regulations promulgated by the NMFS on January 22, 1974, dictated the use of a 2-inch maximum mesh size safety panel. Other specifications were also spelled out.

Additional data on the performance of safety-panel boats vs no-panel boats have since been collected. The results of more recent statistical studies substantiate the effectiveness of the safety panel (see below).

(b) Large volume net

During pursing, major reductions in volume and changes in configuration of the net occur, some of which are important in contributing to porpoise mortality. Leadline length is reduced to essentially zero. A great reduction in the volume of the water encompassed by the net and in the circumference of the circle to 1/16th of the original size results in extensive convolutions of the net (Figures 2 and 3, from model studies). Under ideal conditions, these folds are uniformly distributed around the net and do not constitute a great hazard to the porpoise. However, adverse currents and gear malfunctions may at times cause non-uniform folding and produce large pockets of webbing, which are hazardous to the porpoise.

These observations formed the basis for net designs which might eliminate some of these hazards. Because the degree of folding was dependent upon the ratio of length to depth of net, it followed that an advantage could be gained by using deeper nets without an increase in length. Depth measurements of tuna purse seines and studies with models had shown that a substantial amount of webbing normally built into each end of a tuna purse seine was unused. Therefore a new tapered design purse seine was proposed.

In essence, the new design involved an approximate 70% increase in the depth of the net adjacent to an offset center and reduced amounts of webbing toward the ends of the net, thus altering the historical rectangular shape of the gear (Figure 4).

This design was tested and improved by construction of a 1/150 scale model. Modifications on the basis of the tests were incorporated into the final net design.

These modifications included:

1) Incorporation of a 1-1/2-inch mesh safety panel into the large-volume net rather than the standard 2-inch mesh used by the industry. The change was suggested by early observations on porpoise entanglement in the 2-inch mesh. Experiments to determine best mesh size are continuing.

2) Changes in the dimensions of the safety panel, making it both deeper to cover the floor of the channel, where porpoises frequently dive prior to backdown, and wider to increase the periphery of the net.

Figure 2. Tests with a model of a conventional purse seine demonstrate a significant reduction in the area and volume of a purse seine during operation. In this picture, the net has been layed and pursing is just beginning.

Figure 3. Following pursing, the skiff has moved towards the center of the net and the net volume and area are greatly reduced. The man in the foreground performs the same function as the seine skiff by holding the boat with towline and bridle.

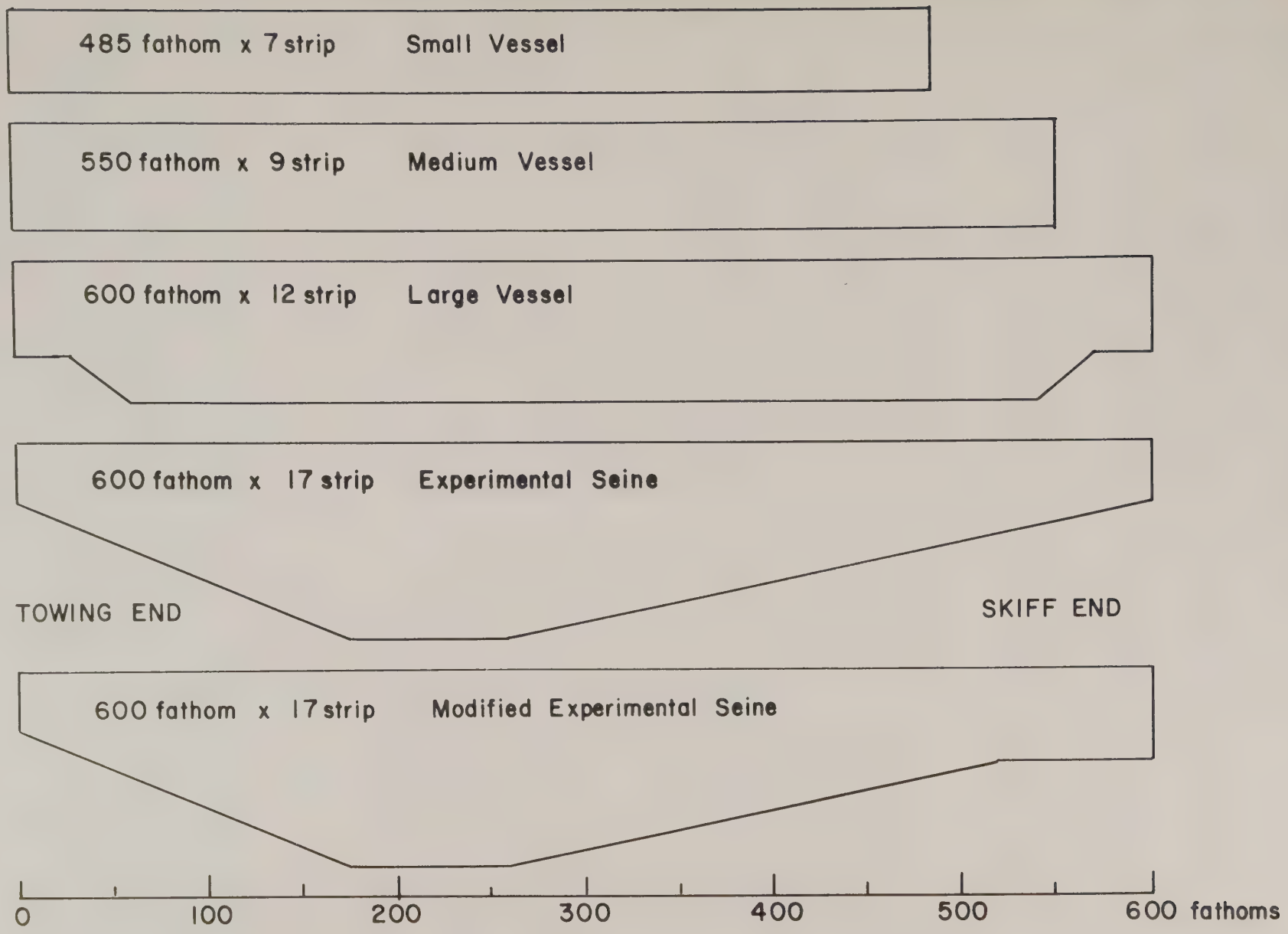

Figure 4. Purse seine design variations.

3) Reduction of thread size in the safety panel, to keep the weight and drag of the enlarged, smaller-meshed safety panel to a minimum.

4) Reduction in the bulk of the net webbing, by using small-sized twine (#24) wherever possible.

5) Sealing up "hand-holds" along the corkline to preclude the possibility of entrapment of porpoise attempting to escape through a hole slightly smaller than its body.

Following construction of the new, large-volume net in November 1973, preliminary trials of setting and hauling the gear (not involving fish or porpoise) were conducted in waters off San Diego. Results were encouraging. Folds and convolutions in the corkline had been reduced, surface area at the conclusion of pursing appeared greater than for a standard seine and the net volume available for containment of the animals was correspondingly increased. These desired changes in performance of the gear were accomplished without an unreasonable increase in the amount of webbing required to build a new net, without increasing the length of the net, and without significantly increasing total weight of the gear.

The first evaluation of the experimental large-volume net under actual tuna fishing conditions was made during a charter cruise in November 1973. The results, although highly encouraging, indicated the need for minor design modifications. These were made in the spring of 1974, and the large-volume net was placed aboard a tuna seiner for use during a regular commercial fishing trip. On both the charter and the regular trips, the numbers of porpoise killed during the use of the large-volume net have been among the lowest thus far recorded in the fishery for yellowfin tuna associated with porpoise (Appendix E). Further evaluation of the net under commercial fishing conditions, for statistical validity, will continue.

(c) Torque-balanced cable

An examination of gear malfunction data from tuna purse seine vessels showed one common, recurring gear malfunction which, if eliminated, could substantially reduce net collapse and its attendant porpoise mortalities. This malfunction, known as a "roll-up," occurs when purse seine webbing is wrapped around the steel purse line at the bottom of the net forming a long sausage-like roll of webbing that stops pursing operations and is difficult to untangle (Figure 5). Some roll-ups require several hours to untangle. Moderate to severe roll-ups often contribute to collapse of the net and cause mortality of both porpoise and fish.

Figure 5. Roll-up on bow purseline during initial experiments with torque-balanced wire rope. Cause of roll-up was attributed to use of conventional wire rope center pieces and two types of torque-balanced purseline. Removal of flexible sections improved performance.

Because no clear definition of a roll-up existed in the fleet, determining the frequency and judging the severity of this malfunction from vessel log records are difficult. In 1974, however, observers were directed to record all occasions when webbing was wrapped around the purseline in such severity that winches had to be stopped and the pursing operation delayed for one minute or longer.

The results from 18 boats sampled indicated that while only a few boats experienced frequent "time-loss" roll-ups, most boats had occasional roll-up problems. Roll-ups occurred on about 9% of all porpoise sets, but on only about 6% of school fish sets. The porpoise mortality rate for roll-up sets was about double that for non-roll-up sets, i.e., 18.5% of all mortality occurred in the 9% of the sets that had roll-ups.

Roll-ups are caused by rotation of the purseline induced primarily because of twisting and untwisting of the helical lay of the cable during strain and relaxation. It was apparent that if purselines could be prevented from rotating, then the number of roll-ups could be reduced. Several types of commercially available wire rope are constructed with sub-cables twisted in opposite directions to the lay of their inner strands to reduce rotation under strain. From engineering data, one type of such torque-balanced cable was selected for preliminary tests with the tuna purse seining system.

Following initial testing on NMFS charter cruises, five sets of torque-balanced cable were provided to tuna purse seiners for evaluation during regular fishing operations. In one case, the vessel receiving the cable had previously experienced severe roll-up problems.

In general, results of these trials indicate that torque-balanced cable has contributed to reduction in the number of roll-ups and in their severity, particularly on vessels which are prone to this problem. However, it appears that combining torque-balanced cable with other sections of regular cable and passage of the cable through blocks and fairleads can affect the cable's torque-balance characteristics. Further work on these problems may optimize the desirable characteristics of torque-balanced cable.

Torque-balanced cable is required by NMFS regulations on those boats that have experienced a significant number of roll-ups.

2. Other techniques

(a) Backdown maneuver

This industry-developed method for removing porpoise alive from the net is described in Appendix A.

(b) Ribbon current indicator

Differential currents are involved in net collapse where the surface and subsurface waters are moving either in the same direction at different speeds or in different directions. In response to those forces, the net folds upon itself, drapes around the seiner, or billows into dangerous pockets of webbing which can effectively entrap porpoise and fish, killing both. Fishermen usually have no means of knowing the magnitude and direction of differential currents prior to setting their gear. Clearly, a method was needed which would provide information on direction and magnitude of currents prior to setting the gear, to predetermine the most advantageous direction to set the gear.

A ribbon current indicator, consisting of a fluorescent colored ribbon with a float at one end and a 2-ounce weight attached to the other was developed and tested. The ribbon is spooled around the float for storage. When cast in the water the weight rapidly reels the ribbon off the float. Near the surface the angle of departure from the vertical indicates magnitude of current, and the ribbon streaming away from the cork indicates direction (Figure 6).

Use of the current indicator with a small compass equipped with two bezel rings, to indicate the current direction in relation to the direction of the set, gave useful indications of current direction and magnitude in preliminary tests. The indicators will be introduced into the fleet on a trial basis.

(c) Keeping the net open

Differential current indicators and torque-balanced cable are promising solutions for preventing the two major causes of net collapse. However, riptides and other time-delaying factors causing gear malfunctions can also lead to net collapse. Clearly, a general remedial procedure was needed for deployment whenever net collapse appeared imminent.

Modern tuna purse seiners carry 4-6 speedboats equipped with either 65 or 85 hp outboard engines. It appeared feasible to use these speedboats to hold the net open when collapse threatened.

Preliminary tests showed that by installing three additional reversed bunch lines and having three speedboats pulling on two adjacent bunch lines, the net could be pulled into a large pentagonal shape (Figure 7). This configuration provided sufficient area and volume to contain large catches of tuna and porpoise safely. It was also found that by having each speedboat

Figure 6. Moderate to strong surface current is indicated by ribbon current indicator during calm weather. Knowledge of direction and magnitude of current can allow deployment of purse seine in the most advantageous direction to minimize the possibility of net collapse.

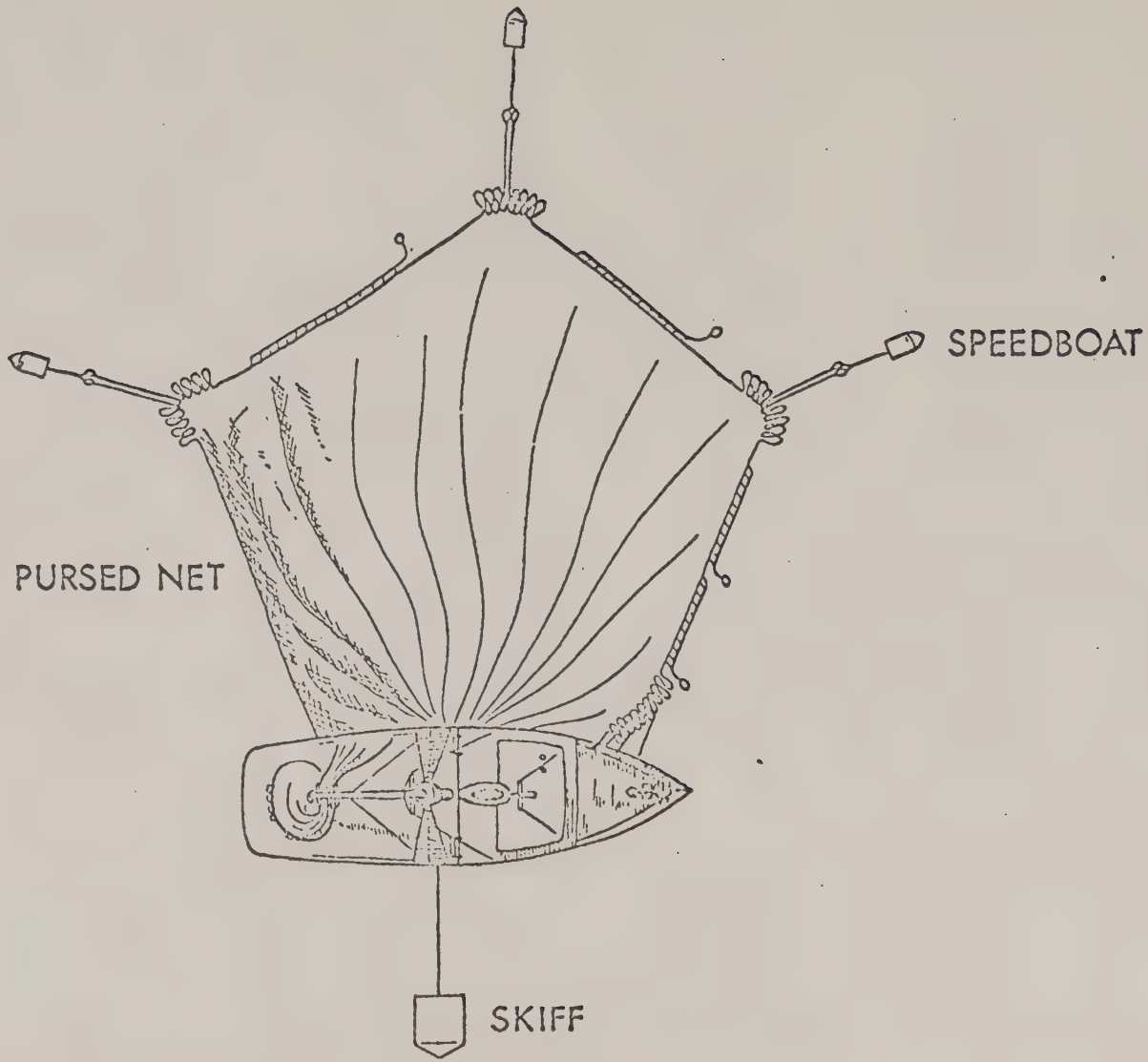

Figure 7. Idealized configuration of net under tow by speedboats.

and the seine skiff tow at a slight angle from the perpendicular, the entire net, seiner, speedboats, and seine skiff configuration could be rotated 180° in less than 15 minutes. This allowed repositioning the seiner relative to differential currents, as necessary.

Although speedboats are not needed during every set to hold the net open, subsequent tests on the fishing grounds showed that collapse of the net could be averted through their use when conditions warranted it. Use of speedboats to combat net collapse is now required by the regulations.

(d) Net tender at corkline

In recent years, most boats have stationed a small skiff (net tender) at the corkline of the backdown area. Following backdown, the animals entangled in the Medina panel and in the large mesh below the panel are pulled to the surface and freed. The effectiveness of this procedure in reducing porpoise mortality is indicated by a preliminary analysis of 23 recent cruises.

The boats fall into three categories: 1) no net tender at corks during backdown; 2) net tender used in some sets; 3) net tender always used. The results are shown in table 2, which indicates a substantial lower kill rate when net tenders are always used.

While a more detailed study is desirable, these preliminary results suggest that the net tender "clean-up" is effective and that its adoption by the fleet would be helpful in reducing porpoise mortalities.

D. Fleet performance in reducing the incidental kill

1. Factors contributing to reduction of incidental kill of porpoise

The Report of the NOAA Tuna-Porpoise Review Committee examined the effects of net modifications such as the Medina panel in reducing the incidental kill of porpoises in 1968, 1971, and 1972, and concluded that "although results to date are preliminary, the sample data do suggest that the Medina panel results in a substantial reduction in the number of porpoise killed during normal sets." The report mentioned, however, that because of a variety of changes taking place in the methods of handling the net, the design of vessels and the strategy of fishing "the general evolution of fishing technology and vessels themselves have contributed to a decrease in incidental kill rates" rather than the net modification by itself. Since publication of the NOAA report, collection of additional data by NMFS observers aboard U.S. tuna vessels in 1973 and 1974 made it possible to examine some of the effects of fishing technology on the incidental kill rate.

Table 2. Results of use of net tender at backdown area.

	Net tender		
	Never Used	Sometimes Used	Always Used
No. of boats in sample	6	4	13
Kill	2,137	1,726	5,178
Tons YF	1,326	1,375	5,025
Kill Rate/ton YF	1.61	1.26	1.03

The task of analyzing the data was contracted to Science Applications Inc. (SAI), La Jolla, California by NMFS; a summary of SAI's findings (Fabrick and Faverty, 1974) follows.

The effects of the Medina panel, bow thruster, malfunctions, and sea conditions on the incidental kill rate were examined by SAI using non-parametric statistics. A combined sample of 1,021 porpoise sets made in 1971-1973 was examined.

SAI arrived at four preliminary conclusions: 1) the Medina panel appeared to reduce the percentage of porpoise killed (total kill/number netted x 100) in a net by an average factor of 2 to 3; 2) the bow thruster had no apparent effect on reducing porpoise mortality; 3) set malfunction increases the average percentage of porpoise killed by a factor of 2 and was not related to age of vessel; and 4) rough sea conditions result in significantly higher porpoise mortality. These conclusions are preliminary because inherent limitations in the available data precluded analyses leading to any final conclusions. Data for 1971 and 1972 were from a selected group of vessels that were not representative of the fleet, and data for 1973 were from a more representative sample of the fleet. By pooling the data for analyses, data from entirely different groups of vessels with different operational characteristics probably were compared. What is needed to demonstrate statistically that the Medina panel contributes to a reduced kill, for example, are data on the same group of vessels operating under similar conditions with and without the Medina panel. Such data are not now available.

2. Trends in incidental kill rate.

The overall average percentage of porpoise killed in a set appears to have decreased sharply from 26.3% in 1971 to 7.0% in 1973 and leveled off at 7.4% in 1974 (Table 3). Statistical analysis of SAI showed that the difference in percentage for 1973 and 1974 was not significant. As indicated earlier, the NMFS observer data for 1971 and 1972 were not representative of those of the fleet because they were from a select group of vessels; consequently, the trends in the percent killed, particularly the decline between 1971 and 1973, are probably not real. To adjust partially for this sampling bias, the average percentages of porpoise killed for vessels in the 401-600 short tons carrying-capacity-range that were observed in all years were compared. The average percentage of porpoise killed was 21.7% in 1971, 8.2% in 1972, 20.3% in 1973, and 9.6% in 1974. These results suggest that there was a decline in percentage of porpoise killed in 1972, an increase in 1973 and and a decrease in 1974.

More refined analyses are currently in progress that further adjust the data for sampling bias by using data from vessels that fished in identical years. Such analyses should produce more conclusive results on whether the porpoise kill rate has materially changed through the years.

Table 3. Number of porpoise sets observed in 1971-1974 and some statistics for the sets.

Characteristics	1971		1972		1973		1974[1]	
	Mean	No.	Mean	No.	Mean	No.	Mean	No.
1. Total number of porpoise sets		51		273		706		784
2. Average yellowfin catch (tons) per set	18.2	48	20.0	272	23.0	706	11.3	783
3. Number of sets by school type:								
Spotter only		23		117		302		324
Spinner only		0		0		17		11
Spotter and spinner mixed		25		132		279		294
Whitebelly		2		23		104		94
Others or unknown		1		1		4		61
4. Average estimated number of porpoise caught in a set	219	48	486	245	438	609	282	774
5. Average estimated size of porpoise school[2]	298	48	1,007	239	906	704	1,171	705
6. Average kill per set	6?.9	48	43.1	272	18.6	706	12.8	783
7. Average percent kill per animal netted	26.3	48	9.4	245	7.0	609	7.4	663
8. Average percent animals netted per animal in school[2]	79.8	48	58.5	239	51.0	704	49.8	704

[1] Preliminary - Based on sets made in January-March.

[2] Estimates are generally of low precision.

3. Porpoise behavior

It should be noted that besides the gradual widespread use by fishermen of fishing techniques that may reduce the incidental kill of porpoise, the porpoise may have responded to the fishing pressure and become harder to catch. This is not accounted for in the observer data on kill rates. For example, data from sets made on Stenella spp. from 11 cruises made in 1972, 22 in 1973, and 19 in 1974 were examined for two indices:

1) Length of chase: Chase is defined as starting when speedboats are lowered into the water and ending when the net is let go. The modal length of chase did not change, 1972-1974 (Figure 8), but the number of very long chases appears to have been greater in 1974 than in 1973.

2) Percentage of school captured (as estimated by crew): This index shows significant change over the period 1972-1974. The relative number of completely successful sets (entire school captured) has declined, and the number of complete failures has risen (Table 4). There are at least three possible explanations for these trends in both indices: 1) the behavior of the porpoise is changing because of long-term learning; 2) individual schools are chased more during a single season because of increased pressure (more vessels making more sets) and the schools are therefore less approachable; and 3) because of increased competition, the fishermen are pursuing and setting on more marginal, less approachable schools than they would have in the past. All of these factors, and others, may be operating.

IV. PRESENT STATUS

Some of the NMFS-developed techniques are now required by law. Meanwhile some of the newer gear developments are being tested on a few of the boats in the fleet. It is clear that it will take considerably more time before additional test data on the NMFS gear and method developments are available for detailed statistical analysis as to their efficacy.

Although an analysis of our over-all sample of porpoise sets indicates a reduction in the kill rate indices (kill-per-set, kill-per-ton of yellowfin, and kill-per-number of porpoises in the net, Table 3), it is clear that the trends are not the same for all size classes of vessels. This, of course, suggests the need to examine in greater detail the representativeness of the fleet sampling. It is clear, however, that the effectiveness of the fleet in reducing kill will probably continue to increase as technological modifications improve.

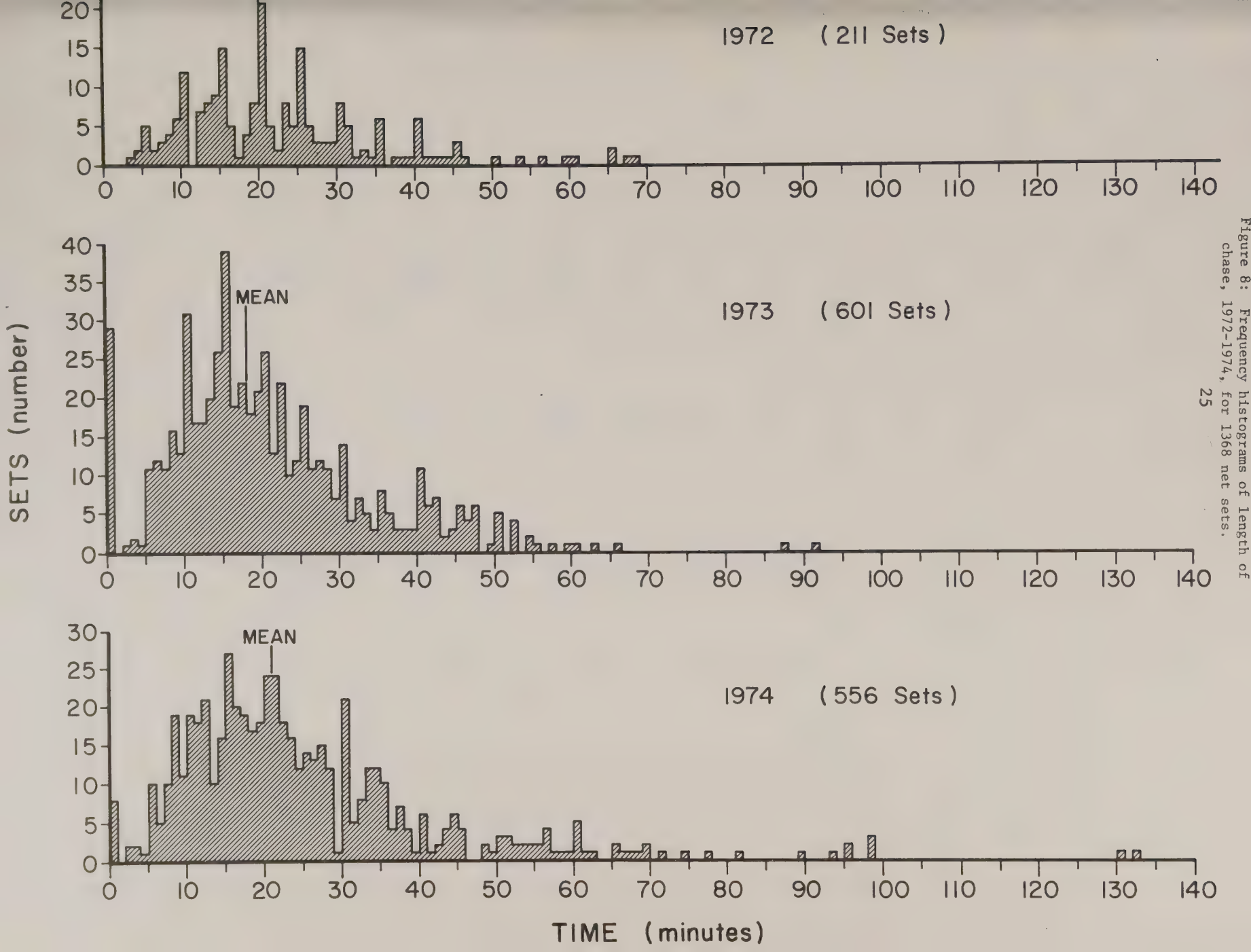

Figure 8: Frequency histograms of length of chase, 1972-1974, for 1368 net sets.

Table 4. Estimated percentage of school captured (sample size in parenthesis)

Percent Captured	Percent Frequency		
	1972	1973	1974
0	5.7% (10)	9.7% (52)	10.9% (59)
1-24	14.2 (25)	15.6 (84)	22.1 (120)
25-49	15.9 (28)	17.5 (94)	19.1 (104)
50-74	22.7 (40)	23.3 (125)	17.7 (96)
75-99	11.6 (20)	13.4 (72)	13.4 (73)
100	30.1 (53)	20.5 (110)	16.8 (91)
Total	100 (176)	100 (537)	100 (543)

V. LITERATURE CITED

Coe, J. M. and G. Sousa. 1972. Removing porpoise from a tuna purse seine. Marine Fisheries Review 34(11-12): 15-19.

Fabrick, A. J. and R. L. Faverty. 1974. Analysis of porpoise kill data. Contract Report, Science Application Inc., San Diego, California.

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APPENDICES

APPENDIX A

The "Backing-Down" Process

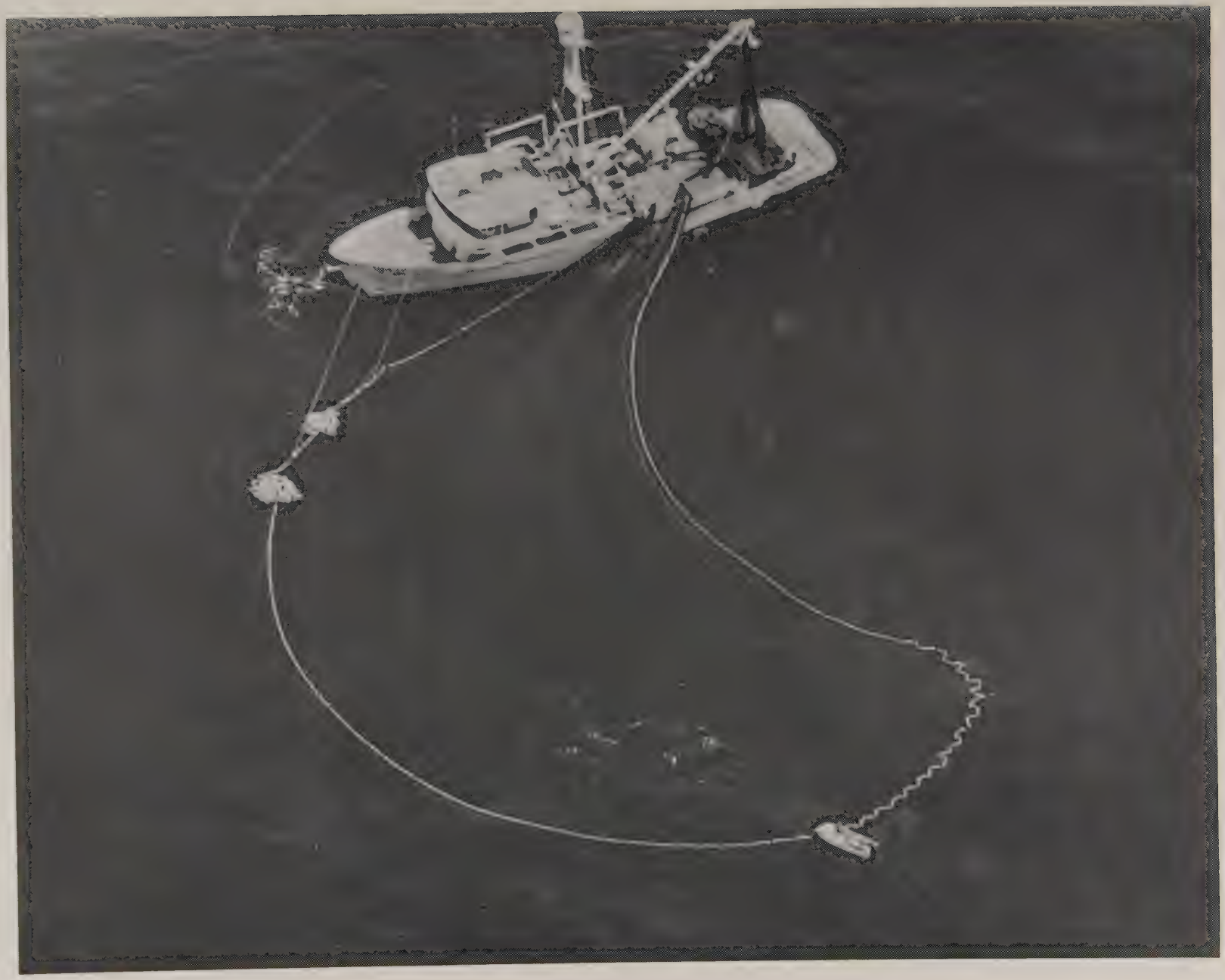
The maneuver to aid in the removal of porpoise from the pursed seine is called "backing down." Backing down requires dedication and skill, and procedures are not standard. Each captain has developed the most effective methods for his own boat and net, and ideas on backing down have been exchanged among the U.S. fishermen. Coe and Sousa (1972) give a detailed description of the general prodecure, summarized, in the following.

When approximately two-thirds of the net has been brought aboard, the hauling end of the net is secured and the vessel moves in a reverse direction through a wide arc aided by the seine skiff secured by a towing bridle (App. Fig. A1 and A2). During back-down, porpoise congregate at the extreme end of the net while the tuna tend to swim back and forth between the porpoise and seiner. When the tuna are near the seiner, the vessel is backed rapidly to cause the corkline to submerge at the end of the net where the porpoise are located. As backing down proceeds, the corkline is pulled under the porpoise to release them unharmed.

When the tuna swim towards the backdown area, and threaten to escape from the net, the boat is slowed and the corks rise to the surface. Usually, several such operations are necessary to back out the porpoise.

Generally, the procedure is aided by a crewman in a small skiff (the net tender) stationed at the end of the channel who signals the captain when the fish are away from the release area and helps the porpoise over the corkline. When necessary he attempts to pull the cork line to the surface to retain fish. It is a common and sometimes hazardous practice for crewmen to enter the water to untangle porpoise by hand and help them over the corkline.

Appendix Figure A1. Backdown beginning. The porpoise have moved towards the backdown area. (Official U.S. Navy photograph.)



Appendix Figure A2. Backdown almost completed. Net configuration has narrowed into a finger-like backdown channel. A group of porpoise is going over the sunken corkline next to the net tender, and a freed group of porpoise is leaping and running in the foreground. (Official U.S. Navy photograph.)

APPENDIX B

Other Approaches to Modifying Tuna Purse Seine Gear and Technology

During the initial stages of the gear development program, and less frequently since then, numerous methods to solve the porpoise mortality problem were suggested. Examples of concepts considered and brief reasons for their rejection (parenthesized statements) follow.

1) Electricity for electrotaxis, electronarcosis and electrocution of tuna to separate them from porpoise to allow easy release of porpoise through a gate system. (Dangerously high voltages are needed for application in salt water. Dead fish will sink to the webbing floor and collapse the net.)

2) Chemicals to kill the tuna, allowing release of the porpoise unharmed. (Extremely large quantities of chemical are needed for immediate response and could pollute the area. Dead fish will collapse the net and sink it.)

3) Trained porpoises to guide captured porpoise out through safe escape routes. (Major porpoise species involved in the fishery have never been successfully tamed and trained. Maintaining trained animals of another porpoise species aboard a purse seiner would be extremely difficult and prohibitively expensive. Futher, there is no assurance that one porpoise species would respond to another.)

4) Submerged purse seines. (Once the corkline loses buoyancy, the net will continue to sink and, if buoyed by bridles to large floats, fish will escape over the top of the net.)

5) Pneumatic models of killer whales. (Porpoises do not respond.)

6) A secondary purse seine of small mesh to entrap porpoise, thus separating them from the tuna. (Porpoise must be released from two nets increasing the probability of entanglement in the webbing.)

7) Artificial rafts to lure tuna from the porpoise schools. (Previous research indicates little promise for this approach unless the rafts have been in the water for a considerable time.)

8) Gas bubble screen generated by compressed air or dry ice to separate porpoise from the tuna. (Air hoses and dry ice would be complicated to deploy and maintain.)

9) Bait fish to lure tuna away from porpoise schools. (U.S. tuna purse seiners cannot catch bait on the tropical tuna grounds without entering territorial waters of other nations. Purse seining evolved partly in response to the bait acquisition problem.)

10) Plastic ribbons attached to the webbing that would flutter in the current and scare porpoise away from the webbing. (Unless trapped under canopies or greatly crowded, porpoise tend to stay away from webbing.)

Other concepts temporarily postponed (reasons in parentheses) after preliminary tests were completed, are discussed below; further work may be done on some of them.

1) A dual purseline technique intended to separate porpoise swimming near the surface from tuna swimming deeper in the net. (Underwater observations show that vertical separation of the two animals is weakly developed. Model studies show that the configuration would cause extreme undulation in the corkline to create porpoise "traps" and accelerate net collapse.)

2) A pneumatic gate system to raise and lower the corkline. (Mechanically, the gate worked, but porpoises would not always pass through. It was also complicated and difficult to use.)

3) Use of solid plastic panels ("Gonsalves Panels") of different materials and colors placed over the cork lines in several sections of the net and in the entire periphery of the backdown area to form a "ramp" and, possibly, to attract the animals. (The hydrodynamics of the panels with respect to the net dynamics and the attraction of animals to colors are not known.)

4) Use of two speed boats and length of rope fitted beneath the backdown area to form a tight line partitioning the porpoise from the tuna. (Power output of speedboats must be perfectly matched. In tests using 65hp motors it was found that the motors were too weak and failed to effect total separation. These boats are very dangerous to use in rough seas.)

5) Use of a large lampara-type skimmer net inside the main net and pulled by speed boats to surround porpoise and pull them over the corkline. (Deployment too slow and cumbersome, and required extra manpower. Porpoise easily avoided net.)

6) Dyes to separate porpoise and tuna. (Tuna readily passed through fluorescein dye, and dynamics of backdown maneuver allowed dye to go out through side of net.)

7) A zipper system to form two backdown areas for separation of porpoise and tuna with subsequent safe release of porpoise through a special gate system. (Although this system worked well on model and salmon purse seines it failed to achieve suitable form on a tuna purse seine. Has not been attempted with porpoise and tuna.)

8) Acoustic signals such as recorded killer whale "screams", porpoise "alarm calls", and 50 kHz echo-sounder pings to drive the animals through a net opening. (Because cetaceans are acoustically highly-evolved, this approach has special appeal. More time and resources have been spent on acoustic methods than any of the other suggestions, but results to date are not promising. In brief, the animals may respond but tend to panic. A number of porpoise have been killed during some of these acoustic experiments.)

APPENDIX C

Program Personnel and Budget

In Appendix Table C1 are the names of the personnel (both full-time permanent and temporary) employed in the SWFC research program since the passage of the MMPA in October 1972.

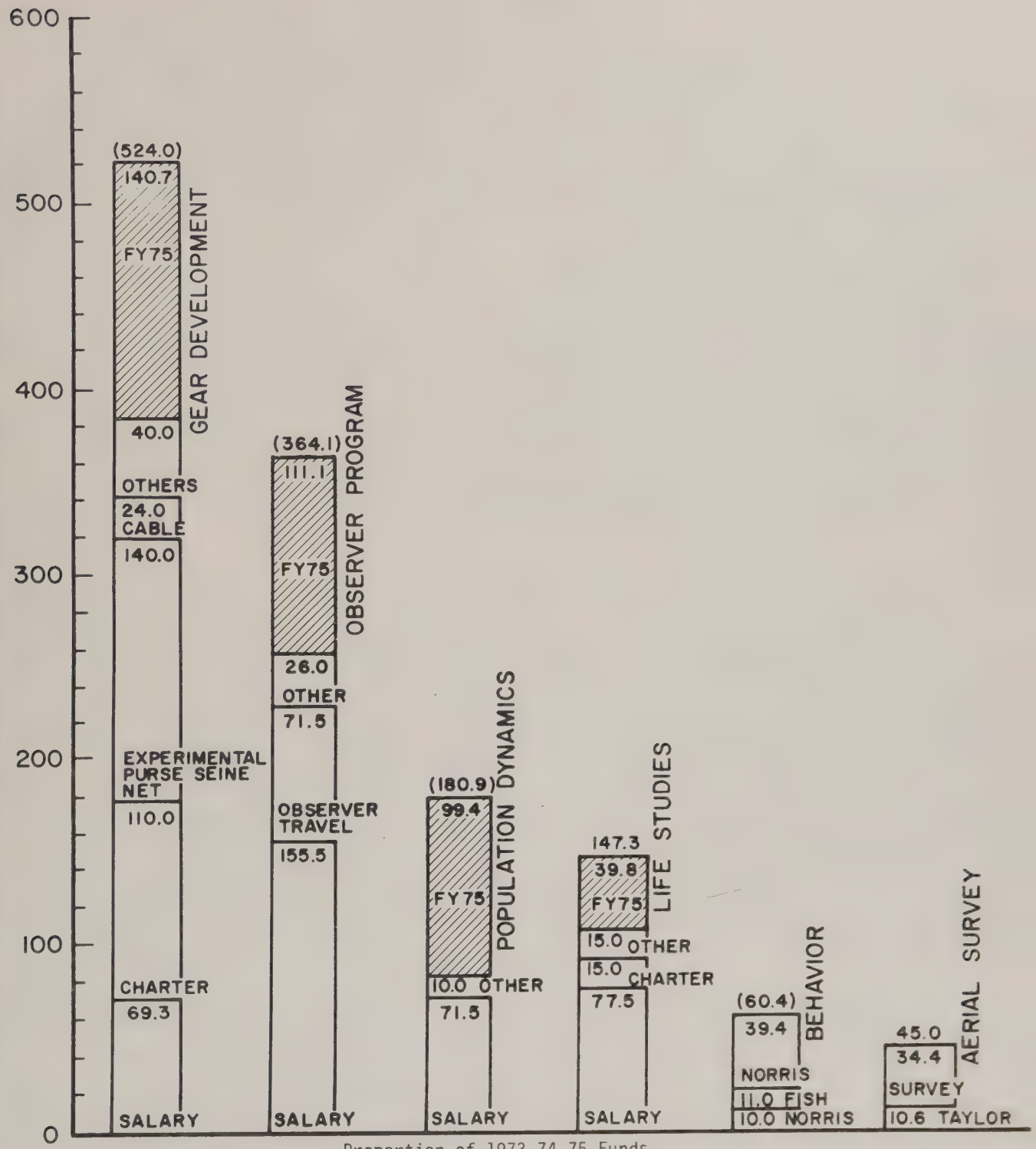
Four scientists have been concerned with research and supervisory aspects of the program. Support has been provided by four full-time technicians. A NOAA officer has functioned in a liaison and procurement capacity. (Recently, two additional technical assistants have been added to the program.) Technological developments have been under the direction of the ranking fishing gear specialist in the NMFS, assigned from the Northwest Fisheries Center (NWFC). Other members of the NWFC Gear Technology Group as well as SWFC program personnel have been detailed to gear work on a part-time basis. A total of 34 temporary "porpoise observer" positions has been filled during the 2-year period to collect data during fishing trips of commercial purse seine vessels. Most of the observers are college graduates trained in the biological sciences. Their lengths of service were determined mainly by the number and duration of their fishing voyages and available funds. In addition, personnel from the SWFC and other NMFS Laboratories have been assigned to the program, mainly as observers, on a short-term basis.

Direct funding and the allocation of these funds within the SWFC program categories are shown in Appendix Figure C1 for FY 1973, 1974, and 1975 combined. Funding for FY 1973 and 1974 was $930,700 funding for the FY 1975 program is $391,000.

Appendix Table C1. Porpoise research program-personnel man years (November '72 to October '74)

PERSONNEL	PROGRAM COMPONENT	MAN YEARS
Dr. Eric Barham	Program Manager	1.5
Dr. William Perrin	Life Studies	1.9
James Coe	"	0.9
David Holts	"	0.9
Ruth Miller	"	1.6
	Total	5.3
Dr. Tim Smith	Population Assessment	1.4
Dr. Gary Stauffer	"	1.0
Dr. Gary Sakagawa	"	0.2
Lt. Warren Taguchi	"	1.5
Charles Oliver	"	0.8
Stephen Clark (NEFC)	"	0.2
Makoto Kimura	"	0.1
Robert Butler	"	0.3
	Total	5.5
Richard McNeely (NWFC)	Gear Program	1.9
Jerry Jurkovich (NWFC)	"	1.1
Fred Wathne (NWFC)	"	0.2
Daniel Twohig (NWFC)	"	1.1
William High (NWFC)	"	0.3
Robert Loghry (NWFC)	"	0.2
Gary Loverich (NWFC)	"	0.2
	Total	5.0
James Coe	Observer Program	0.9
David Holts	"	0.9
Charles Bowlby	"	0.2
Robert Olson	"	0.6
John Ploeger	"	1.0
Frank Ralston	"	0.3
Jerome Rosen	"	0.7
Christopher Ryan	"	0.3
Kenneth Sexton	"	0.9
John Young	"	0.5
Robert Cunningham	"	0.9
Charles Oliver	"	0.8
David Zantiny	"	0.6
Stephen Reilly	"	1.2
Danford Otis	"	0.3
Ralph Hoffmaster	"	0.3
Robert Loghry (NWFC)	"	0.3

PERSONNEL	PROGRAM COMPONENT	MAN YEARS
	Observer Program	
C. Martin Feddie	"	0.3
Garry Ulrich	"	0.3
John Halas	"	0.3
Donald Hoffman	"	0.3
Stephen Ahern	"	0.3
William Steel	"	0.3
Robert Bourke	"	0.5
William Flerx	"	0.5
Jeffery Twack	"	0.6
Terry Foreman	"	0.6
Robert Hazdt	"	0.6
John Thompson	"	0.6
Richard Strassel	"	0.1
Dale Powers	"	0.7
Robert Garvie, III	"	0.6
Perry Thompson (SEFC)	"	0.3
John Dohrman	"	0.4
Thomas Duffy	"	0.8
Roy Amick	"	0.8
Gordon Armstrong	"	0.8
Ronald Dotson	"	0.3
	Total	26.3



Proportion of 1973-74-75 Funds
Designated Tasks - Southwest Fisheries Center
Marine Mammal Program
Total Fundings: FY-73, FY-74: $930,700
Proposed Funding: FY-75: $391,000

Appendix Figure C1

APPENDIX D.

Research and Service Contracts

Research and service contracts let by the SWFC's porpoise research program in fiscal years 1973 and 1974 are listed in Appendix Table D1.

Aerial assessment of porpoise populations

A contract was let to Dr. John Taylor, University of California, San Diego, to do a feasibility study on the use of aerial photoreconnaissance techniques to assess porpoise populations. His study dealt with the following factors: sensing devices, platforms, environmental constraints, and data reduction. Dr. Taylor's results provided a baseline of information not only for deciding feasibility but in determining some operational procedures. He concluded that while it is possible to use aerial photoreconnaissance techniques to assess porpoise populations, this would be a very costly venture and only through cooperation with other governmental agencies and the tuna industry would such a program be successful.

Behavior studies of tuna-porpoise interaction

Two contracts were awarded to Dr. Kenneth Norris and his associates at the University of California, Santa Cruz, in FY '73 and FY '74 to study tuna-porpoise interactions. The first, smaller contract resulted in a review of the pertinent scientific literature with conclusions that "cetacean schools represent an order of complexity higher than that of other marine organisms, with the possible exception of pinniped schools," and that "porpoise schools are complexly structured aggregations of animals built into subgroups which may have either familial, age, or habitual bases, which are able to respond to varying environmental circumstances through transactional or second-order learning, which serve the essential function of providing the conditions for life throughout the lives of the component animals, and which may vary in form on both a daily and seasonal basis depending upon the needs of the animals. No leadership, except for dominance relationships within and between subgroups can be perceived."

The second contract involved studies on escape behavior from gear (the purse seine) and possible means of separating porpoise from tuna in a net. These were made with wild and captive porpoise. Two features of porpoise behavior are their extreme reluctance to pass through net openings and their avoidance of objects such as streaming lines in the net.

In one series of experiments, to test a means of separating the porpoise from the tuna, wild porpoise in both deep and shallow water, were herded into an enclosure composed of 60-foot vertical rope streamers set at varying distances; this herding gear is called a hukilau in Hawaii. In deep water the porpoise eventually dived under the streamers. In shallow water they remained contained for as long as 3 hours and 50 minutes before making their breaks through the streaming ropes.

Appendix Table D1. - Research and Service Contracts let at the Southwest Fisheries Center since Fiscal Years 1973 and 1974.

Contractual Organization	Funding (Fiscal Yr).	Chief Investigator	Subject
University of California San Diego, California	$10,600 (73)	Dr. John Taylor	Aircraft assessment of porpoise
University of California Santa Cruz, California	$10,010 (73)	Dr. Kenneth Norris	Behavior studies of tuna-porpoise interaction
U.S. Naval Undersea Center, San Diego, CA	$10,972 (73)	Dr. James Fish	Acoustical research aimed at reducing porpoise mortality in the tuna fishery
University of California Santa Cruz , California	$39,383 (74)	Dr. Kenneth Norris	Behavior studies of tuna porpoise interaction
Science Applications, Inc. San Diego, California	$ 9,031 (74)	Allan J. Fabrick Roy L. Faverty	Analysis of porpoise kill data
Service Contracts			
Contractual Organization	Funding (Fiscal Yr.)		Service
Smithsonian Institution Washington, D.C.	$ 7,650 (73)		Skeleton preparation for life history study
Frank Navarro San Diego, California	$11,500 (73)		Constructing NMFS experimental purse seine net
Ocean Fisheries, Inc. San Diego, California	$950.23		Modification of NMFS experimental purse seine net
Westgate Terminals, Inc. San Diego, California	$15,000 (73)		Vessel charter M/V Independence
John Puratich Seattle, Washington	$10,000 (73)		Vessel charter of M/V St. Janet
Ocean Fisheries San Diego, California	$100,000 (73)		Vessel charter of M/V John F. Kennedy
Dept. of the Interior Office of Aircraft Serv. Anchorage, Alaska	$23,881 (74)		Aircraft charter
John O'Connor Newport Beach, California	$ 2,100 (74)		Consulting - aerial fish spotting

In another experiment captive spotted porpoise were studied to determine the smallest size of opening through which they would escape from a net. This work was conducted in tanks on one animal which was crowded toward various single net openings of different sizes in different experiments (Appendix Figure D1).

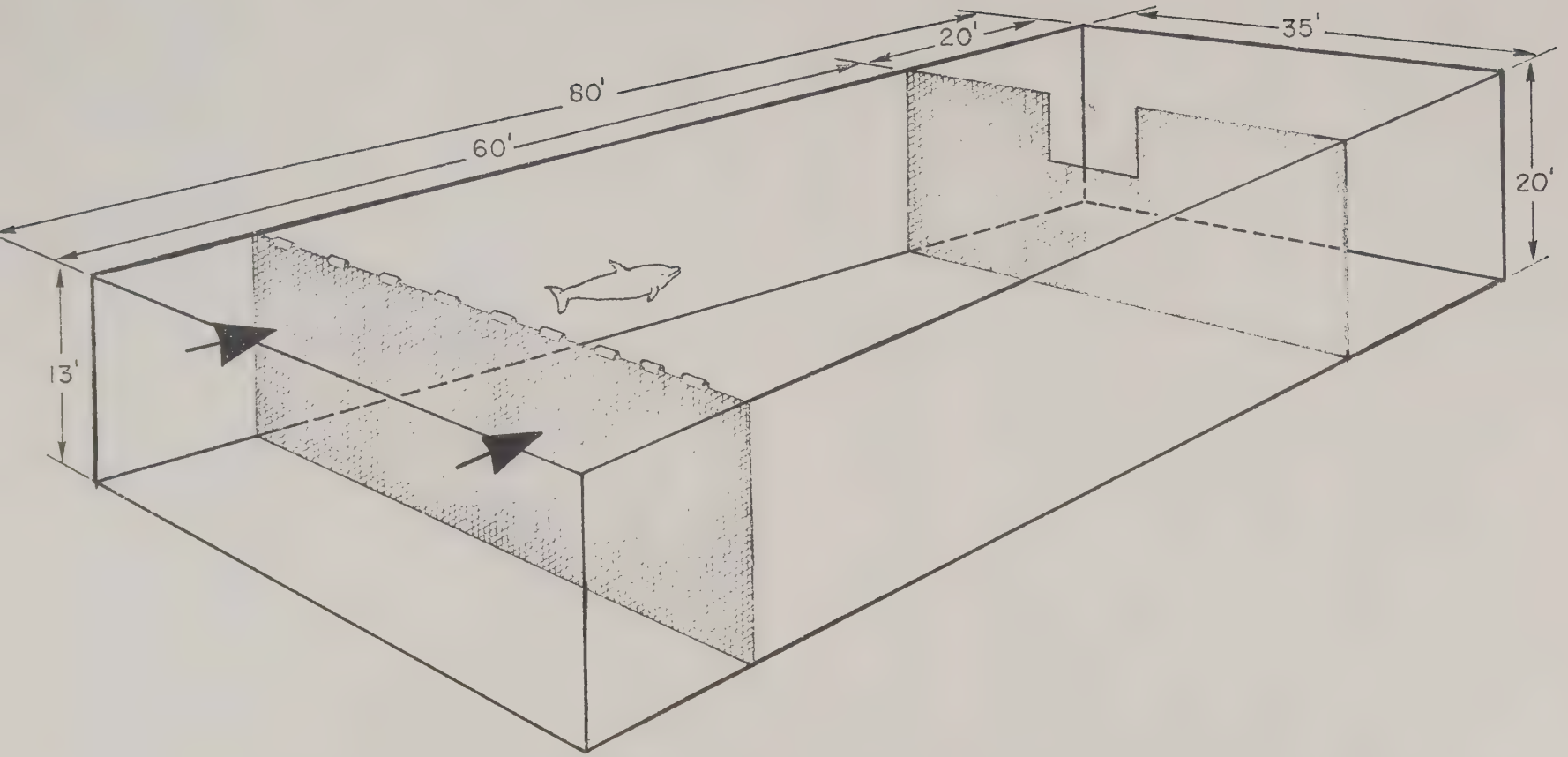
Test results were not definitive but they did show the minimum size net openings and distances between streaming ropes through which porpoise might elect to pass. When the opening was less than 25 square feet, the animals would pass through the smallest opening (3 x 5 feet) only 25% of the time, and would never return to the test area. When the opening was 50 square feet and 100 square feet, the animal would voluntarily return to the test area 50% and 100% of the time.

Acoustic studies

The U.S. Naval Undersea Center conducted experiments with the recorded voc ization of a Hawaiian spotted porpoise to see whether such sound when broadcast would affect porpoise in the wild. When transmitted in the vicinity of local wild spotted porpoise off Oahu, those animals immediately fled the area. When presented to herds of spotters off Kona, the sounds did not evoke any escape response. (A control sound track of human whistles and voices also elicited no response by the herds off Oahu.)

Analysis of porpoise kill data

A contract was let to Science Applications Incorporated to analyze existin data gathered by observers, to determine the effectiveness of fleet modificatio in both strategy and gear in reducing porpoise kill. The results of their analyses are reported where pertinent in the text.



Appendix Figure D1. Diagram of crowder net used to determine adequate size of net opening to facilitate porpoise escape from tuna purse seines. A Hawaiian spotted porpoise was used in the experiments.

APPENDIX E

Charter Cruises and Fishing Trials of Gear Developments

To study the tuna purse seining system in relation to porpoise mortalities and to carry out tests and evaluations of porpoise rescue methods, a number of charter cruises and trips on commercial fishing vessels were made by program personnel. The dates and objectives of early cruises are listed below. The results of later cruises to evaluate the devices and methods described in Section III of this report are also discussed briefly.

Vessel	Dates	Objectives and conditions
Conquest	Dec. 22, 1970	Trip arranged through ATA. Tests of hydraulic gate and echo sounder pulses to drive whitebelly porpoises.
San Juan	May 14-15, 1971	Charter trip made in local waters with sets made on whitebelly porpoise schools. Evaluation of small-mesh Medina panel and radio tracking methods done in collaboration with Navy scientists.
Westport	Sept. 7-8, 1971	Charter trip tests of hydraulic gate and killer whale screams on local whitebelly schools. Skimmer net also tested.
Queen Mary	Nov. 17- Dec. 16, 1971	Charter trip to the fishing grounds to evaluate killer whale screams and the Medina panel, and to tag animals and collect life history and behavioral data. Radio tag tracking also done in collaboration with Navy scientists.
Independence	Sept. 27- Oct. 29, 1972	Charter cruise to the fishing grounds to study causes of porpoise mortality and the tuna purse seining system. Biological data were also collected, and porpoises were tagged.
Independence	Jan. 1- Feb. 13, 1973	Commercial trip to the fishing grounds to observe and photograph porpoise and tuna behavior in the purse seine.
John F. Kennedy	May 21- June 5, 1973	Charter trip in local waters to study net dynamics, test torque-balanced cable, and experiment with the use of speedboats to hold open a purse seine.

Fishing trials of recent gear developments

To test and evaluate NMFS gear developments, two charter cruises were conducted from October 16-December 15,1973. The vessels used for the work, the M/V Trinidad, and M/V John F. Kennedy, were selected by lottery from a list of vessels that had cooperated with the observer program, met required specifications, and were available within a certain time period.

The charters were conducted within the yellowfin tuna regulatory area during the closed season. It should be noted that fishing conditions in this situation are not precisely those of the open season. The weather is usually good and there is less competition from other fishing vessels. However, the more relaxed atmosphere allows time for trial and error experimentation.

To obtain as valid a statistical test as possible, the newly-developed large-volume net, equipped with torque-balanced cable, was separated from the other developments and tested on the M/V Kennedy. The skipper was instructed to use normal fishing procedures and catch the allowed amount of fish as quickly as he could. The only additional tasks were several special sets for tagging and acoustic experiments.

All other gear and strategy innovations and experiments were tested and conducted on the Trinidad cruise. The Trinidad's net was also fitted with torque-balanced cable.

Trinidad cruise

All sets during the October 16-November 11 cruise were made on yellowfin tuna associated with porpoises. A total of 15 sets produced a porpoise mortality rate (porpoise/tons of tuna) of 0.66 for slightly over 500 tons of tuna. This rate is approximately one-half the fleet average for 1973, but statistically is not a significant experiment. According to NMFS records, a prior trip in the same year by the Trinidad, operating without any of the NMFS innovations, produced 712.5 tons of tuna in 51 sets on porpoise and an identical mortality rate of 0.66. However, qualitative evaluation could be made of the gear and strategy innovations. For example, the technique of maintaining a net open, threatened by collapse, with speedboats was considered a complete success. The differential current indicating system showed promise, but full evaluation was not obtained. Two minor no-time-loss roll-ups occurred. However, the Trinidad is not prone to roll-ups and the general characteristics of the cable were favorable.

Kennedy cruise

From November 10-December 15, 1973, the experimental large-volume net took about 500 tons of tuna from 30 porpoise sets. The kill rate, including those killed during the NMFS acoustic and tagging sets, was a record low at that time--0.35 porpoise per ton of tuna. Results are considered statistically valid. The torque-balanced cable was satisfactory and no time-loss roll-ups occurred. While this is extremely encouraging, again it should be noted that the results from a charter cruise are not strictly comparable with those under competitive conditions.

Regarding general performance of the net, it was considered very easy to handle in backdown procedures, sinking down and bobbing up with minor throttle control. There was some difficulty passing the added bulk through the Kennedy's 42-inch purse block and a 48-inch block was recommended for its future use. Several features were considered inadequate: the rolling strips were not heavy enough; more buoyancy was desirable in the corkline; and the extreme taper did not provide enough webbing in the bunt end, so that sacking up large catches of tuna was difficult.

Recent fishing cruise

In June 1974, recommended modifications were made to the net. A newly launched purse seiner volunteered to take the net, accompanied by a NMFS gear specialist, on her maiden voyage. The ship left port in late June 1974, to fish outside the CYRA. In that area at that time of year, the fishing can be highly competitive and under extremely trying weather conditions. About 95% of all sets there are made on porpoise. The NMFS observer transferred to another vessel and arrived in San Diego on September 1, 1974. A preliminary summary of his logs shows a record low kill rate of 0.27 for 37 sets on porpoise, with no mortality occurring on 17 of the sets. As is usual for low-mortality trips, most of the kill occurred during a few sets, mainly those made late in the afternoon that were hampered by darkness, and those on very large schools of porpoise. Several needed modifications to the net became apparent during the cruise, and these will be made before further testing.

APPENDIX F

federal register

THURSDAY, SEPTEMBER 5, 1974
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PART I

THE NATIONAL ARCHIVES OF THE UNITED STATES
LITTERA SCRIPTA MANET
1934

CHAPTER II—NATIONAL MARINE FISHERIES SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE

PART 216—MARINE MAMMALS

Incidental Taking in the Course of Commercial Fishing Operations

The Marine Mammal Protection Act of 1972 (16 U.S.C. 1361–1407) provides in section 101(a)(2) that during the twenty-four month period initially following the date of enactment of the Act, the taking of marine mammals incidental to the course of commercial fishing operations shall be permitted and shall not be subject to the provisions of sections 103 and 104. Subsequent to such twenty-four month period marine mammals may be taken incidental to commercial fishing operations but under permits issued pursuant to section 104, subject to regulations promulgated in accordance with section 103 of the Act, and in accordance with procedures promulgated under section 104.

On March 13, 1974, a notice of intent to prescribe regulations was published in the FEDERAL REGISTER (39 FR 9685). Pursuant to that intent, proposed regulations were published in the FEDERAL REGISTER (39 FR 12356–61) on April 5, 1974.

Written views, comments or objections were considered if submitted prior to May 15, 1974. Comments timely received were presented and made a part of the record of an agency hearing which was held on May 15 and 16, 1974 in Seattle, Washington. In addition, ten witnesses representing the National Marine Fisheries Service, the fishing industry, the State of Alaska, and public groups appeared, presented testimony, and responded to cross-examination for the record. Following the hearing, four briefs were filed by certain of the parties represented at the hearing.

Based on the hearing record and the briefs submitted, the Administrative Law Judge issued his recommended decision on July 15, 1974, concluding, among other things, that the record fully supports the promulgation of regulations and that the proposed regulations as modified and amended by his decision should be adopted as the final regulations.

A draft environmental impact statement (DEIS) was prepared and submitted to the Council on Environmental Quality (CEQ) on April 5, 1974, concurrent with the publication of the proposed regulations. Public hearings regarding the DEIS were held in Washington, D.C., on May 7, 1974, and at Terminal Island, California, on May 9, 1974. A final environmental impact statement (FEIS) was transmitted to CEQ on August 29, 1974.

Copies of the Administrative Law Judge's decision and the FEIS are available for review in the offices of the Director, National Marine Fisheries Service, 3300 Whitehaven Street, N.W., Washington, D.C. 20235 or at the five regional offices listed below:

Director, Northwest Region
1700 Westlake Avenue North
Seattle, Washington 98109

Director, Southeast Region
Duval Building, 9450 Gandy Boulevard
St. Petersburg, Florida 33702

Director, Northeast Region
14 Elm Street
Gloucester, Massachusetts 01930

Director, Southwest Region
300 South Ferry Street
Terminal Island, California 90731

Director, Alaska Region
P.O. Box 1668
Juneau, Alaska, 99801

As a result of his analysis of the hearing record, the briefs submitted in connection therewith, recommendations from the Marine Mammal Commission, and the Administrative Law Judge's decision, the Director, National Marine Fisheries Service, has determined that certain changes be made in the proposed regulations (39 FR 12356–61, April 5, 1974). The changes in the proposed regulations are made below. Explanations are only provided where the Director's changes deviate from the Judge's decision. The reasons for the Judge's changes are set forth in his decision.

Reprinted from the

1. Section 216.24(b)(1)(ii) and (iii) are amended.

2. Section 216.24(b)(2) is amended to provide for application for a general permit by organizations which represent members of a class.

3. Section 216.24(b)(3) is amended, and the expiration date for the initial general permits has been put at December 31, 1975, rather than being for an indefinite period as set forth in the proposed rule making of April 5, 1974. The Judge's recommendation to terminate the general permits on December 31, 1976 has not been accepted because such date is predicated on the imposition of certain other requirements relating to yellowfin tuna purse seine gear contained in the proposed regulations which the Judge rejected. In addition, an informal public hearing under section 553 of the Administrative Procedure Act is provided with respect to 103(d) information within three months prior to or subsequent to the expiration of the initial general permit. This latter change is based upon recommendations contained in the hearing record and briefs.

4. Section 216.24(c) is amended to further clarify application procedures, and to change the fees for certificates of inclusion to reflect the cost of administering the permit program for the different categories of permits and certificates of inclusion. It has been determined that with respect to most certificates, a $10.00 basic fee is appropriate to cover administrative costs, rather than the proposed $5.00 fee. Administrative costs are greater for the yellowfin tuna category than other categories; therefore, we are establishing a fee of $200. Provision is made for review of the fee. These changes are based on issues raised in the hearing record and are in addition to the Judge's recommendation.

5. Section 216.24(d) is amended.

6. Section 216.24(d)(1)(ii) is amended.

7. Section 216.24(d)(1)(iii) is amended. The Judge's recommendation is supplemented with an amendment to prevent the intentional killing or injuring of Atlantic bottlenosed dolphins. This is added to reflect the fact that the evidence disclosed that Atlantic bottlenosed dolphins do not cause the kind of damage or present the danger to fishermen that would justify the intentional killing or injuries permitted by this subsection.

8. Section 216.24(d)(1)(v) is amended.

9. Section 216.24(d)(2) and Section 216.24(d)(2)(i) are amended.

10. Section 216.24(d)(2)(iii) is amended.

11. Section 216.24(d)(2)(iv) is amended in subsections 216.24(d)(2)(iv)(A), (C), (D), (E)(2), and (E)(3). Section 216.24(d)(2)(iv)(E)(2) is amended beyond the Judge's recommendation to include a definition for the phrase "significant number of roll ups," for clarity. Corresponding figure No. 1 is also amended.

12. Section 216.24(d)(2)(v) is amended.

13. Section 216.24(d)(2)(vii) is amended to include the Judge's recommendation and also to replace the word "demonstrate" with the word "perform" to more accurately state what is required.

14. Section 216.24(d)(2)(viii) is amended and redesignated § 216.24(d)(2)(ix) and a new section 216.24(d)(2)(viii) is added.

15. Section 216.24(d)(3) is amended to clarify its title.

16. Section 216.24(d)(3)(ii) is amended to correspond to the amended § 216.24(d)(1)(ii).

17. Section 216.24(d)(3)(iii) is amended to correspond to the amended section 216.24(d)(1)(iii).

18. Section 216.24(d)(3)(v) is amended to correspond to the amended § 216.24(d)(1)(v).

19. Section 216.24(d)(4)(ii) is amended to correspond to the amended § 216.24(d)(1)(ii).

20. Section 216.24(d)(4)(iii) is amended to correspond to the amended § 216.24(d)(1)(iii).

21. Section 216.24(d)(4)(v) is amended to correspond to the amended § 216.24(d)(1)(v).

22. Section 216.24(d)(5)(ii) is amended to correspond to the amended § 216.24(d)(1)(ii).

23. Section 216.24(d)(5)(iii) is amended to correspond to the amended § 216.24(d)(1)(iii).

24. Section 216.24(d)(5)(v) is amended to correspond to the amended § 216.24(d)(1)(v).

25. Section 216.24(e)(1) is amended, adding in addition to the Judge's recommendation a phrase noting that any finding by the Director in respect to foreign fishing technology would be published in the FEDERAL REGISTER. Since the Act's section 101(a)(2)'s provision for an alternative method of certifying imported fish as caught in compliance with the Act requires an affirmative finding by the Director, the addition specifically recognizes federal rule making procedures.

26. Section 216.24(e)(2) is redesignated as § 216.24(e)(3), and amended to implement the new § 216.24(e)(2) as follows: "and" is added to subpart (i) and subpart (ii) is amended to require the quantity as well as species of fish to be shown on the shipping documentation. The change is a technical one designed to assure more positive identification of the shipment. These changes are in addition to the Judge's recommended changes.

27. A new § 216.24(e)(2) is added to provide a means for the Director to designate that certain species and categories of fish are not involved with commercial fishing operations which cause the death or injury of any marine mammals and therefore are not subject to the importation prohibitions and documentation requirements of § 216.24(e). This new section is an addition to the Judge's recommended changes. Such designation will eliminate a substantial amount of otherwise required documentation and will comply with and implement the intentions and requirements of the Act.

28. Section 216.24(e)(3)(iii) formerly § 216.24(e)(2)(iii), is amended to conform to the reworded subsection (e)(1). A phrase is added to the beginning of the subsection, for the reasons stated above with respect to (e)(1), that is, to note that this method of certifying compliance with the Act will not go into effect until such time as the Director makes and publishes an affirmative finding as to the rate of incidental kill or serious injury for particular foreign fishing technologies. These changes are based on issues raised in the hearing record and are in addition to the Judge's recommendations.

29. A phrase is added to § 216.24(e)(3)(iv), formerly § 216.24(e)(2)(iv), requiring that the government official's or fishing master's statement identify the exporter, species, and quantity of the fish presented for importation. The change is a technical one meant to connect such statements more specifically to the other shipping documentation. In addition, the subsection is clarified to make it clear that these regulations are the regulations referred to in the subsection. These changes are based on issues raised in the hearing record and are in addition to the Judge's recommendations.

30. A new § 216.24(e)(3)(v) is added to provide for, among other things, an additional way to import fish if it can be documented that the fish were caught prior to the effective date of these regulations. These changes are based on issues raised in the hearing record and are in addition to the Judge's recommendations.

31. Section 216.24(e)(3)(vi), formerly § 216.24(e)(2)(v), is amended to provide alternative forms for the presentation of the required certification. These changes are based on issues raised in the hearing and are in addition to the Judge's recommendations.

32. Certain minor subsection reletteering is done to implement the FEDERAL REGISTER's suggested format for subsection numbering. These changes are in addition to the Judge's recommendations.

33. Section 216.24(g) is added.

34. To assure that the FEIS is available for 30 days before the final action is taken, the effective date of these regulations is delayed until September 30, 1974. Prior to that date, no formal action will be taken with respect to applications for permits. Modifications of these regulations prior to the effective date, to the extent such modifications are necessary and permissible, will be announced in the FEDERAL REGISTER.

These regulations are effective September 30, 1974.

Dated: August 29, 1974.

ROBERT W. SCHONING,
Director, National Marine Fisheries Service.

§ 216.24 Taking and related acts incidental to commercial fishing operations.

(a) After October 20, 1974, no marine mammals may be taken in the course of a commercial fishing operation unless the taking constitutes an inci-

dential catch as defined in § 216.3, a general permit and certificate of inclusion have been obtained in accordance with these regulations, and such taking is not in violation of such permit. It is the immediate goal that the incidental kill or serious injury of marine mammals occurring in the course of commercial fishing operations be reduced to insignificant levels approaching a zero mortality and serious injury rate.

(b) Permits: (1) General permits to allow the taking of marine mammals in connection with commercial fishing operations will be issued to persons using fishing gear within any one of the following five general categories:

(i) *Towed or Dragged Gear.* Shall include those commercial fishing operations utilizing towed or dragged gear such as bottom otter trawls, bottom pair trawls, multi-rig trawls, and dredging gear.

(ii) *Encircling Gear; Yellowfin Tuna Purse Seining.* Shall include those commercial fishing operations utilizing purse seines for yellowfin tuna.

(iii) *Encircling Gear; Seining other than Yellowfin Tuna.* Shall include those commercial fishing operations utilizing seines for species other than yellowfin tuna.

(iv) *Stationary Gear.* Shall include commercial fishing operations utilizing stationary gear such as traps, pots, wiers, and pound nets.

(v) *Other Gear.* Shall include those commercial fishing operations utilizing trolling, gill nets, hook and line gear, and any gear not classified u nder paragraph (b)(1) (i), (ii), (iii), or (iv) of this section.

(2) Permits shall be issued as general permits to a class of fishermen using one of the general categories of gear set forth above. Any member of such class or any organization representing members of a class may apply for a general permit on behalf of all members of the class. Subsequent to a grant of the general permit, individuals may make application to be included under the terms of a general permit.

(3) General permits shall be valid for one year. However, initial general permits shall expire on December 31, 1975. All permits issued thereafter shall expire on December 31 of the year issued. Such general permits shall be subject to review, modification, suspension or revocation and may contain terms and conditions prescribed in accordance with section 104(b)(2) (16 U.S.C. 1374(b)(2)) of the Act. The Director shall conduct an informal public hearing within three months prior to or subsequent to the expiration of such initial general permits at which he shall present information described in section 103(d)(1)–(4) of the Act with reference to the regulations and permits in effect and the research and development program.

(4) Upon proper application for inclusion under the general permit, certificates of inclusion shall be issued to masters or other persons in charge of vessels engaged in commercial fisheries, or if no vessels are involved, to those who participate in commercial fishing operations. Such certificates are not subject to public hearings prior to issuance. Such certificates shall not be transferable but will be valid on any vessel or boat for which the individaul named in the permit is the master or person in charge.

(5) The certificate must be in the possession of the person to whom it was issued in the course of his fishing operations and shall be shown upon request to an enforcement agent or other designated agent of the National Marine Fisheries Service.

(6) Crew members of vessels are not required to possess permits.

(c) Applications: (1) Applications for a general permit will be accepted on the effective date of these regulations. After issuance of a general permit, applications for inclusion under such general permit will be accepted at any time. All persons included under a general permit will receive a certificate evidencing such inclusion and setting forth the period of time during which they may conduct fishing operations under the general permit. Initial certificates shall be valid through December 31, 1975. Thereafter, certificates will expire on December 31 of the year issued.

(2) Applications for certificates of inclusion should be addressed as follows:

Residents of the States of Washington, Oregon, Idaho, Montana, Wyoming, Colorado, North Dakota, South Dakota, and Utah, should make application to the Regional Director, National Marine Fisheries Service, Seattle, Washington 98102.

Residents of the States of California, Nevada, Arizona, Hawaii, and the territories of American Samoa, Guam, and Trust Territories, should make application to the Regional Director, National Marine Fisheries Service, Terminal Island, California 90731.

Residents of the State of Alaska should make application to the Regional Director, National Marine Fisheries Service, Juneau, Alaska 99801.

Residents of the States of Maine, Vermont, New Hampshire, New York, Massachusetts, Connecticut, Rhode Island, New Jersey, District of Columbia, Pennsylvania, Delaware, Maryland, Virginia, West Virginia, Ohio, Michigan, Wisconsin, Illinois, Indiana, and Minnesota, should make application to the Regional Director, National Marine Fisheries Service, Gloucester, Massachusetts 01930.

Residents of the States of North Carolina, South Carolina, Florida, Mississippi, Louisiana, Texas, Georgia, Oklahoma, Alabama, Nebraska, Iowa, Tennessee, Missouri, New Mexico, Kentucky, Kansas, Puerto Rico, Virgin Islands, and Arkansas, should make application to the Regional Director, National Marine Fisheries Service, St. Petersburg, Florida 33702.

(3) Applications for certificates of inclusion should contain:

(i) The name of the person(s) which is to appear on the certificate of inclusion;

(ii) The category of the general permit under which the applicant(s) wishes to be included;

(iii) The species of fish sought and general area of operations;

(iv) Identity of State or local commercial fishing licenses. If any, under which fishing operations are conducted and dates of expiration;

(v) Name and signature of person, persons, or organization making application.

(4) Applications for certificates of inclusion must contain a payment in accordance with the following schedule for each person named in paragraph (c)(3)(i) of this section. The schedule of fee payment is:

Categories 1, 3, 4, and 5, Towed or Dragged Gear; Encircling Gear, Seining other than yellowfin; Stationary Gear; Other Gear; $10.00.

Category 2, Encircling Gear, Yellowfin Tuna Purse Seining: $200.00.

The Director may change the amount of said required payment at any time he determines the different payment to be reasonable, and said change may be accomplished by publication in the FEDERAL REGISTER of the new payment required, without the necessity of amending these regulations.

(5) The Regional Director receiving applications for a general permit shall determine the adequacy and completeness of such applications received by him and if found to be adequate and complete, will forward them to the Director, National Marine Fisheries Service, who will forthwith publish a notice of such application in the FEDERAL REGISTER, giving interested parties thirty days in which to submit written data or views with respect to the granting of such permit.

(6) If within thirty days after the date of publication of notice with respect to an application for a general permit any interested party or parties requests a hearing in connection therewith, the Director may conduct a hearing. Any hearing held in connection with a general permit shall be conducted in the same manner as hearings held in connection with scientific or display applications under § 216.33.

(7) The Regional Director receiving applications for certificates of inclusion shall determine the adequacy and completeness of such applications and, upon his determination that such applications are adequate and complete, he shall immediately approve such applications and thereafter notify the applicants of his approval and issue a certificate to approved applicants.

(d) Terms and conditions of fishing operations under general permits shall include but not be limited to the following:

(1) *Towed or dragged gear.* (i) A certificate holder may take marine mammals so long as such taking is an inci-

dental occurrence in the course of normal commercial fishing operations. Marine mammals taken incidental to commercial fishing operations shall be immediately returned to the environment where captured without further injury.

(ii) A certificate holder may take such steps as are necessary to protect his catch, gear, or person from depredation, damage or personal injury without inflicting death or injury to any marine mammal.

(iii) Only after all means permitted by paragraph (d)(1)(ii) of this section have been taken to deter a marine mammal from depredating the catch, damaging the gear, or causing personal injury, may the certificate holder injure or kill the animal causing the depredation or immediate damage, or about to cause immediate personal injury; however, in no event shall a certificate holder kill or injure an Atlantic bottlenosed dolphin, *Tursiops truncatus*, under the provisions of this paragraph. In no event shall the certificate holder injure or kill any animal permitted to be killed or injured under this paragraph unless the infliction of such damage is substantial and immediate and is actually being caused at the time such steps are taken. In all cases, the burden is on the certificate holder to fully report and demonstrate that the animal was causing substantial and immediate damage or about to cause personal injury and that all possible steps to protect against such damage or injury as permitted by paragraph (d)(1)(ii) of this section were taken and that such attempts failed.

(iv) Marine mammals taken in the course of commercial fishing operations shall be subject to the provisions of § 216.3 with respect to "Incidental catch," and may not be retained except where a specific permit has been obtained authorizing the retention.

(v) All certificate holders shall maintain logs of incidental take of marine mammals in such form as prescribed by the Director. All occurrences resulting in death or injury to marine mammals in the course of commercial fishing operations under the conditions of a general permit shall be immediately recorded in the log and reported in writing to the Regional Director, National Marine Fisheries Service, where a certificate application was made, or to an enforcement agent or other designated agent of the National Marine Fisheries Service, at the earliest opportunity but no later than five days after such occurrence, except that if a vessel at sea returns to port later than five days after such occurrence, then it shall be reported within forty-eight hours after arrival in port. Reports must include:

(A) The location, time, and date of the death or injury

(B) The identity and number of marine mammals killed or injured; and

(C) A description of the circumstances which led up to and caused the death or injury.

(vi) Failure to comply with the provisions of the general permit including, but not limited to, failure to submit upon demand to an inspection by an authorized Federal enforcement agent, or failure to adhere to the provisions of these regulations will subject the certificate holder to a revocation of his certificate and also subject the certificate holder, vessel, and master to the penalties provided for under the Act.

(2) *Encircling Gear; Yellowfin Tuna Purse Seining*

(i) A certificate holder may take marine mammals, so long as such taking is an incidental occurrence in the course of normal commercial fishing operations. Marine mammals taken incidental to commercial fishing operations shall be immediately returned to the environment where captured without further injury. Each certificate holder shall take every possible step to minimize the incidental mortality and serious injury of marine mammals in the course of commercial fishing operations, including refraining from causing or permitting a purse seine under his control to be set around marine mammals when conditions of wind, sea, visibility, or the number of marine mammals and/or fish concerned would, in his judgment, be likely to prevent the effective use of the backdown and other procedures required herein. Such steps to minimize mortality and serious injury shall include, where appropriate, causing a purse seine already set on marine mammals to be released and/or opened to facilitate release of marine mammals where such a step will, in his judgment, be effective and conditions prevent the effective use of the procedures required hereunder. The Director may publish findings relating to conditions of wind, sea, visibility or numbers of marine mammals and fish concerned which prevent the effective use of equipment and procedures required hereunder and result in an unacceptably high rate of incidental mortality and serious injury of marine mammals and under which conditions it would not be permissible to cause a set to be made on marine mammals.

(ii) A certificate holder may take such steps as are necessary to protect his catch, gear, or person from depredation, damage, or threat of personal injury without inflicting death or injury to any marine mammal.

(iii) All certificate holders shall maintain daily logs, in such form as the Director may prescribe, of all sets in which marine mammals are taken. Such logs must include the location, time, and date of set; weather, and water conditions; estimated number and species of marine mammals upon which set was made; estimated number and species of marine mammals caught; method used to remove marine mammals from net; amount and kind of tuna caught; and an actual count of marine mammals killed, and seriously injured, if any, on each set. Such logs shall be subject to inspection at the discretion of the Regional Director, National Marine Fisheries Service, where a certificate application was made, or his designated agents. In addition, copies of all such logs shall be mailed or delivered to the Regional Director, NMFS, where a certificate application was made, at the earliest possible opportunity, but no later than 5 days after the most recent recording in the log, except that if a vessel at sea returns to port later than five days after such occurrence, then it shall be reported within forty-eight hours after arrival in port.

(iv) Certificates will be valid only on vessels equipped with a porpoise safety panel in their purse seine and using other gear and procedures as herein described. Porpoise safety panels and all other gear used in the course of catching and landing yellowfin tuna, backdown and other release procedures shall be maintained in a proper and seaworthy condition. The porpoise safety panel shall be installed as follows:

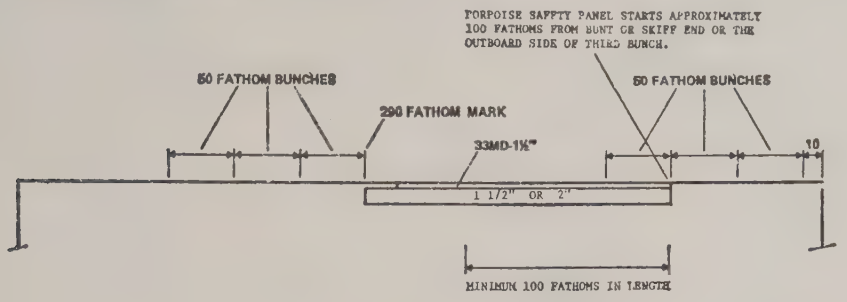
(A) Beginning approximately 100 fathoms from the bunt or skiff end of the net or on the outboard side of the third bunch with sufficient panel installed to protect the entire perimeter of the backdown area from the tie-down point, the porpoise safety panel shall be installed and extend a minimum of 100 fathoms in length. The minimum length of the panel in nets deeper than 10 panels shall be determined at a ratio of 10 fathoms in length for each panel that the net is deep. The porpoise safety panel shall consist of (*1*) one strip of 2" stretch mesh, commencing at the corkline, with a total minimum depth of 225 meshes, or (2) one strip of 280 meshes deep of 1½" stretch mesh, plus a corkline border strip 33 meshes deep, for a total of 313 meshes deep, minimum depth.

(B) Each end of the porpoise safety panel must be identified with an easily distinguishable marker which may be separate from the corkline or may be a single cork in the corkline of a different color than the one on either side.

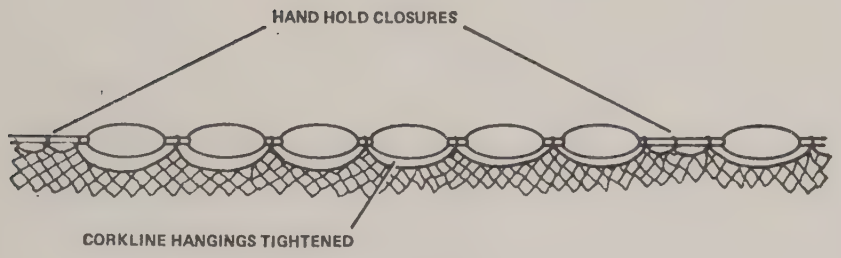
(C) Throughout the length of the corkline in which the porpoise safety panel is located, hand hold openings are to be secured either by false hangings, the installation of small sections of 1½" or 2" stretch mesh, or by hand-constructed webbing of the same size as 1½" or 2" stretch mesh. In any event, by whatever means these areas are closed to prevent porpoise entrapment, proof of its utility to achieve the desired result shall be its resistance to the insertion of a cylindrical shaped object, no larger than one and three-eights inches in diameter.

(D) Porpoise safety panels installed in purse seines on the effective date of these regulations which have been certified by the master or owner of a vessel to the Regional Director, National Marine Fisheries Service, Terminal Island, California, pursuant to the interim regulations effective January 22, 1974 (39 FR 2481), and which have been conditionally approved by the Regional Director for use pending an initial inspection of the net by an authorized agent of the National Marine Fisheries Service or which has been inspected and found to be in conformity with such interim regulations by the Re-

gional Director, as evidenced by notification to the master or owner of the vessel by the Regional Director, shall be deemed to meet the specifications described above for tuna purse seining encircling gear. Five figures are included in these regulations to illustrate and clarify some of the requirements of this class of permit.



LOCATION OF PORPOISE SAFETY PANEL INSERTION
Figure 1 - 216.24 d (2)(iv)



STANDARD SEINE
Figure 2 - 216.24 d (2)(iv)

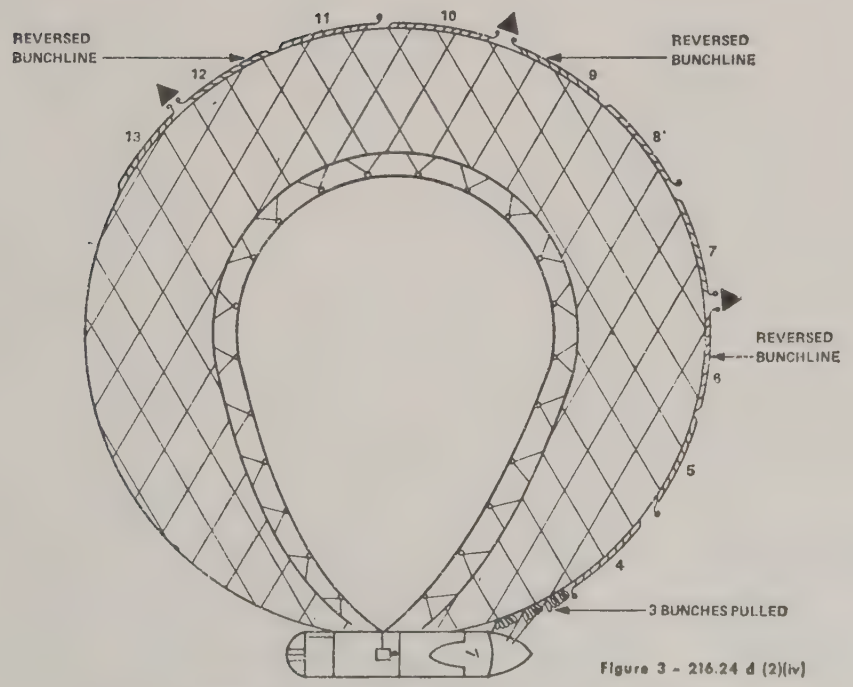


Figure 3 - 216.24 d (2)(iv)

LOCATION OF REVERSE BUNCHLINES FOR USE WITH SPEEDBOATS TO HOLD NET OPEN USING A TOTAL OF 13 BUNCH LINES. TRIANGLES DENOTE TOWING POINTS.

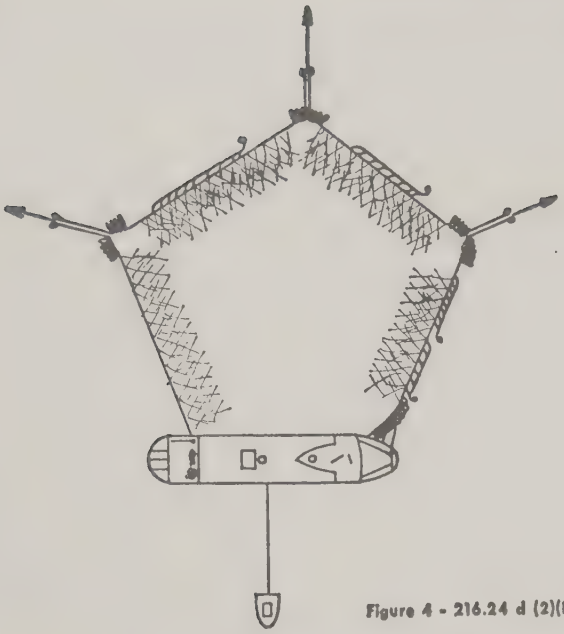


Figure 4 - 216.24 d (2)(iv)

SPEEDBOATS HOLDING NET OPEN, AFTER THE NET IS PURSED, UTILIZING THE THREE REVERSED BUNCH LINES.

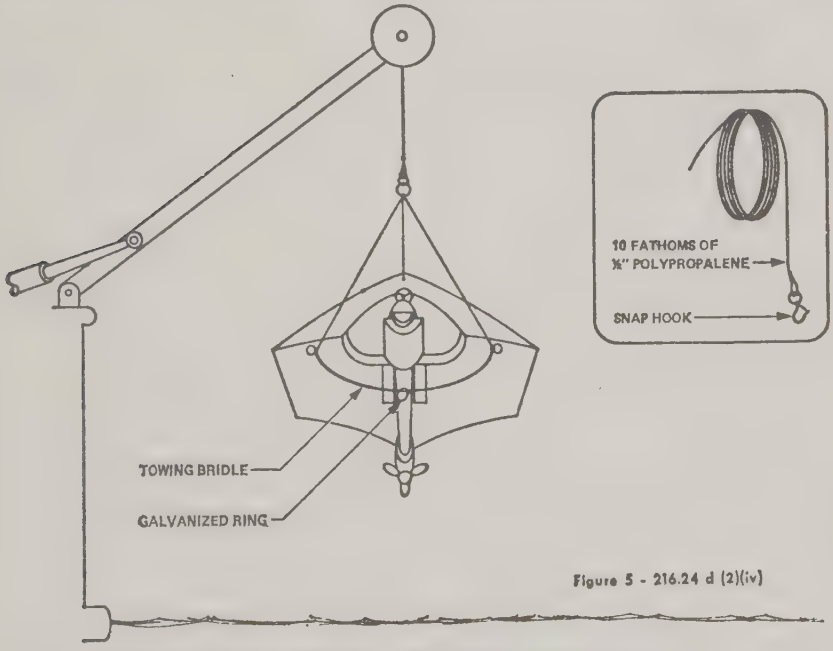


Figure 5 - 216.24 d (2)(iv)

SPEEDBOAT RIGGED WITH TOWING BRIDLE. INSET: LINE KEPT IN SPEEDBOAT TO CONNECT BUNCH LINES TO TOWING BRIDLE.

(E) Other required gear and procedures:

(1) Throughout the entire net, corkline hangings shall be inspected following each trip. Hangings found to have loosened to the extent that a cylindrical object with a 1⅜" diameter will not meet resistance when inserted between the cork and corkline hangings, must be tightened so that a cylindrical object with a one and three-eighths inch diameter cannot be inserted.

(2) Upon a determination by the Regional Director that a vessel is experiencing a significant number of roll-ups and that installation of torque-balanced cable would reduce such roll-up he shall require such vessel to install main purse lines consisting of torque-balanced cable with the exception of the centerpieces which may consist of standard cable of the necessary size and breaking strength. In those cases in which torque-balanced cable is required, at a minimum, the main purse line, and any excess purse line shall consist of torque-balanced cable. Torque-balanced cable is a three-strand preformed right lay wire rope which is resistant to rotation under load or strain in accordance with standards published by the Director in the FEDERAL REGISTER. The phrase "significant number of roll-ups" is defined as one or more sets during which a roll-up occurs and one or more porpoise are killed.

(3) Nets shall contain bunch lines arranged similar to the diagram reproduced herein. The arrangements of bunch lines should allow up to 5 bunch lines to be pulled in normal fishing operations and for the use of speed boats to hold the net open by towing or reversed bunch lines as indicated in figure 3. Each towing point at the conjunction of reversed bunch lines must be marked with a red 40" polyform float or equally visible marker so that towing points can be easily located. All vessels operated by certificate holders under this section shall be equipped with two or more auxiliary boats. Auxiliary boats shall be utilized to hook onto the reversed bunch lines and tow the net open to the pentagonal shape shown in figure 4 in order to prevent the collapse of the net as a required part of every set made on marine mammals. Certificate holders operating vessels that do not carry two or more auxiliary boats may not conduct fishing operations which involve setting purse seines on marine mammals with such vessels.

(v) All tuna purse seine vessels operated by a certificate holder shall be required to carry a porpoise basket suitable to be used over the side of the seine skiff to allow crew members to physically release live marine mammals during drying up and prior to final stages of brailing.

(vi) Following a net set where marine mammals are captured in the course of utilizing a purse seine for catching and landing tuna, backdown and other release procedures shall be continued until all live animals have been released from the net. "Backdown procedure" means a series of maneuvers, which take place after the net is tied down following a set and pursing, which keeps the net open to the greatest degree and allows porpoise or other marine mammals to leave the pursed net over the net floats which are submerged as a result of the vessel moving astern.

(vii) Purse seine nets and other gear and equipment utilized to catch and land fish under this section and to conduct backdown and other procedures herein required, shall be maintained in functional and seaworthy condition. All certificate holders shall maintain proficiency sufficient to perform the procedures required herein. Vessel gear and equipment as well as the proficiency of certificate holders will be subject to inspection and examination by authorized

NMFS personnel at any time at the discretion of the Director. Any vessel found to be equipped with gear which is not in conformity with these regulations or is not maintained in a functional and seaworthy condition shall be declared ineligible for use by a certificate holder for commercial fishing operations under this section and the certificate of any certificate holder who is found to lack proficiency in the procedures required herein shall be immediately suspended or revoked.

(viii) Director may publish a finding of the rate of incidental mortality and serious injury of marine mammals in the course of commercial fishing operations conducted pursuant to these regulations.

(ix) Failure to comply with the provisions of this permit or these regulations, including, but not limited to, failure to submit upon demand to an inspection or examination by an authorized agent of the National Marine Fisheries Service, falsification of logs and reports required hereunder, or failure to satisfy the requirements of any provisions of these regulations, will subject certificate holders, vessel masters, or owners to immediate revocation of the certificate and/or right to be included under a general permit and further subject certificate holders, vessels, masters, or owners to the penalties provided for under the Act.

(3) *Encircling Gear; Seining other than Yellowfin Tuna.*

(i) A certificate holder may take marine mammals so long as such taking is an incidental occurrence in the course of normal commercial fishing operations. Marine mammals taken incidental to commercial fishing operations shall be immediately returned to the environment where captured without further injury.

(ii) A certificate holder may take such steps as are necessary to protect his catch, gear, or person from depredation, damage or personal injury without inflicting death or injury to any marine mammal.

(iii) Only after all means permitted by paragraph (d) (3) (ii) of this section have been taken to deter a marine mammal from depredating the catch, damaging the gear, or causing personal injury, may the certificate holder injure or kill the animal causing the depredation or immediate damage, or about to cause immediate personal injury; however, in no event shall a certificate holder kill or injure an Atlantic bottlenosed dolphin, *Tursiops truncatus*, under the provisions of this paragraph. In no event shall the certificate holder injure or kill any animal permitted to be killed or injured under this paragraph unless the infliction of such damage is substantial and immediate and is actually being caused at the time such steps are taken. In all cases, the burden is on the certificate holder to fully report and demonstrate that the animal was causing substantial and immediate damage or about to cause personal injury and that all possible steps to protect against such damage or injury as permitted by paragraph (d) (3) (ii) of this section were taken and that such attempts failed.

(iv) Marine mammals taken in the course of commercial fishing operations shall be subject to the provisions of § 216.3 with respect to "Incidental catch," and may not be retained except where a specific permit has been obtained authorizing the retention.

(v) All certificate holders shall maintain logs of incidental take of marine mammals in such form as prescribed by the Director. All occurrences resulting in death or injury to marine mammals in the course of commercial fishing operations under the conditions of a general permit shall be immediately recorded in the log and reported in writing to the Regional Director, National Marine Fisheries Service, where a certificate application was made, or to an enforcement agent or other designated agent of the National Marine Fisheries Service, at the earliest opportunity but no later than five days after such occurrence, except that if a vessel at sea returns to port later than five days after such occurrence, then it shall be reported within forty-eight hours after arrival in port. Reports must include:

(A) the location, time, and date of the death or injury;

(B) the identity and number of marine mammals killed or injured; and

(C) a description of the circumstances which led up to and caused the death or injury.

(vi) Failure to comply with the provisions of the general permit including, but not limited to, failure to submit upon demand to an inspection by an authorized Federal enforcement agent, or failure to adhere to the provisions of these regulations will subject the certificate holder to a revocation of his certificate and also subject the certificate holder, vessel owner and master to the penalties provide for under the Act.

(4) *Stationary gear.* (i) A certificate holder may take marine mammals so long as such taking is an incidental occurrence in the course of normal commercial fishing operations. Marine mammals taken incidental to commercial fishing operations shall be immediately returned to the environment where captured without further injury.

(ii) A certificate holder may take such steps as are necessary to protect his catch, gear, or person from depredation, damage or personal injury without inflicting death or injury to any marine mammal.

(iii) Only after all means permitted by paragraph (d) (4) (ii) of this section have been taken to deter a marine mammal from depredating the catch, damaging the gear, or causing personal injury, may the certificate holder injure or kill the animal causing the depredation or immediate damage, or about to cause immediate personal injury; however, in no event shall a certificate holder kill or injure an Atlantic bottlenosed dolphin, *Tursiops truncatus*, under the provisions of this paragraph. In no event shall the certificate holder injure or kill any animal permitted to be killed or injured under this paragraph unless the infliction of such damage is substantial and immediate and is actually being caused at the time such steps are taken. In all cases, the burden is on the certificate holder to fully report and demonstrate that the animal was causing substantial and immediate damage or about to cause personal injury and that all possible steps to protect against such damage or injury as permitted by paragraph (d) (4) (ii) were taken and that such attempts failed.

(iv) Marine mammals taken in the course of commercial fishing operations shall be subject to the provisions of § 216.3 with respect to "Incidental catch," and may not be retained except where a specific permit has been obtained authorizing the retention.

(v) All certificate holders shall maintain logs of incidental take of marine mammals in such form as prescribed by the Director. All occurrences resulting in death or injury to marine mammals in the course of commercial fishing operations under the conditions of a general permit shall be immediately recorded in the log and reported in writing to the Regional Director, National Marine Fisheries Service, where a certificate application was made, or to an enforcement agent or other designated agent of the National Marine Fisheries Service, at the earliest opportunity but no later than five days after such occurrence, except that if a vessel at sea returns to port later than five days after such occurrence, then it shall be reported within forty-eight hours after arrival in port.

Reports must include:

(A) the location, time, and date of the death or injury

(B) the identity and number of marine mammals killed or injured; and

(C) a description of the circumstances which led up to an caused the death or injury.

(vi) Failure to comply with the provisions of the general permit including, but not limited to, failure to submit upon demand to an inspection by an authorized Federal enforcement agent, or failure to adhere to the provisions of these regulations will subject the certificate holder to a revocation of his certificate and also subject the certificate holder, vessel, owner and master to the penalties provided for under the Act.

(5) *Other gear.* (i) A certificate holder may take marine mammals so long as such taking is an incidental occurrence in the course of normal commercial fishing operations. Marine mammals taken incidental to commercial fishing operations shall be immediately returned to the environment where captured without further injury.

(ii) A certificate holder may take such steps as are necessary to protect his catch, gear, or person from depredation, damage or personal injury without inflicting death or injury to any marine mammal.

(iii) Only after all means permitted by paragraph (d) (5) (ii) of this section have been taken to deter a marine mam-

mal from depredating the catch, damaging the gear, or causing personal injury, may the certificate holder injure or kill the animal causing the depredation or immediate damage, or about to cause immediate personal injury; however, in no event shall a certificate holder kill or injure an Atlantic bottlenosed dolphin, *Tursiops truncatus*, under the provisions of this paragraph. In no event shall the certificate holder injure or kill any animal permitted to be killed or injured under this paragraph unless the infliction of such damage is substantial and immediate and is actually being caused at the time such steps are taken. In all cases, the burden is on the certificate holder to fully report and demonstrate that the animal was causing substantial and immediate damage or about to cause personal injury and that all possible steps to protect against such damage or injury as permitted by paragraph (d)(5)(ii) of this section were taken and that such attempts failed.

(iv) Marine mammals taken in the course of commercial fishing operations shall be subject to the provisions of § 216.3 with respect to "Incidental catch," and may not be retained except where a specific permit has been obtained authorizing the retention.

(v) All certificate holders shall maintain logs of incidental take of marine mammals in such form as prescribed by the Director. All occurrences resulting in death or injury to marine mammals in the course of commercial fishing operations under the conditions of a general permit shall be immediately recorded in the log and reported in writing to the Regional Director, National Marine Fisheries Service, where a certificate application was made, or to an enforcement agent or other designated agent of the National Marine Fisheries Service, at the earliest opportunity but no later than five days after such occurrence, except that if a vessel at sea returns to port later than 5 days after such occurrence, then it shall be reported within forty-eight hours after arrival in port. Reports must include:

(A) the location, time, and date of the death or injury

(B) the identity and number of marine mammals killed or injured; and

(C) a description of the circumstances which led up to and caused the death or injury.

(vi) Failure to comply with the provisions of the general permit including, but not limited to, failure to submit upon demand to an inspection by an authorized Federal enforcement agent, or failure to adhere to the provisions of these regulations will subject the certificate holder to a revocation of his certificate and also subject the certificate holder, vessel, and master to the penalties provided for under the Act.

(e) Importation: (1) It shall be illegal to import into the United States any fish, whether fresh, frozen or otherwise prepared, if such fish were caught in a manner prohibited by these regulations or in a manner that would not be allowed in circumstances where a person subject to the jurisdiction of the United States would be required to have a certificate of inclusion in a general permit hereunder, whether or not any marine mammals were in fact taken incident to the catching of the fish, unless the Director makes a finding and publishes such finding in the FEDERAL REGISTER, that such fishing, although not in conformity with the specific requirements of these regulations, is accomplished in a manner which does not result in an incidental mortality and serious injury rate in excess of that which results from fishing operations under these regulations.

(2) All fish are subject to the prohibitions and documentation requirements of this paragraph (e), except the following fish and categories of fish which the Director has determined are not involved with commercial fishing operations which cause the death or injury of any marine mammals—

(i) [Reserved]

(3) Effective October 21, 1974, all fish, except those fish exempted by paragraph (e)(2) of this section, shall be denied entry into the United States unless accompanied by shipping documentation showing:

(i) The country of origin; and

(ii) The identity and quantity of fish; and, either

(iii) After the Director has published the finding referred to in paragraph (e)(1) of this section, a statement from a responsible official of the country of origin that the fishing technology permitted by the country of origin with respect to the species of fish presented for importation into the United States does not result in a rate of serious injury or death to marine mammals in excess of that which results from the conduct of commercial fishing operations as prescribed by these regulations. Country of origin for the purposes of this section shall mean the country under whose flag the fish catching vessels are documented and whose fish are a part of any cargo or shipment of fish to be imported into the U.S. regardless of any transshipments; or

(iv) a statement by a responsible official of the country of origin or the master of the vessel which caught the fish that such fish were not caught in a manner prohibited for U.S. fishermen by these regulations. The statement shall identify the species, quantity, and exporter of the fish to which the statement refers; or

(v) a statement by a responsible official of the country of origin or the master of the vessel which caught the fish that (A) such fish in the shipment were caught prior to the effective date of these regulations; or, (B) if the fish in the shipment are yellowfin tuna, that (*1*) the yellowfin tuna were caught prior to April 1, 1974, or (2) if the yellowfin tuna was caught between April 1, 1974, and October 20, 1974, that the yellowfin tuna was caught in conformance with the interim regulations regarding tuna purse-seining operations (39 FR 2481, January 22, 1974). The statement shall identify the species, quantity, and exporter of the fish to which the statement refers; or

(vi) Any nation may certify to the Director either (A) that all of its vessels fishing under its flag are fishing in conformance with these regulations; or (B) a list of the vessels, by name and official number, fishing under such nation's flag which are fishing in conformance with these regulations; or (C) that all of its vessels fishing under such nation's flag, with the exception of any vessels specifically listed by name and official number, are fishing in conformance with these regulations. If methods (B) or (C) are used, the shipping documentation must also show the name and official number of the vessel which caught the fish presented for importation.

(f) Any duly authorized agents of the Secretary may from time to time, after timely oral or written notice to the vessel owner or charterer, board and/or accompany commercial fishing vessels documented under the laws of the United States, whenever the Secretary determines that there is space available, on regular fishing trips, for the purpose of conducting research or observation operations. Such research and observation operations shall be carried out in such manner as to minimize interference with commercial fishing operations. No masters, charterer, operator or owner of such vessel shall impair or in any way interfere with the research or observations being carried out. The Secretary shall provide for the payment of all reasonable costs directly related to the quartering and maintaining of such agents on board such vessels.

(g) Penalties and rewards: Any person or vessel, subject to the jurisdiction of the United States shall be subject to the penalties provided for under the Act for the conduct of fishing operations in violation of these regulations. The Secretary shall recommend to the Secretary of the Treasury that an amount equal to one-half of the fine incurred but not to exceed $2,500 be paid to any person who furnishes information which leads to a conviction for a violation of these regulations. Any officer, employee, or designated agent of the United States or of any State or local government who furnishes information or renders service in the performance of his official duties shall not be eligible for payment under this section.

[FR Doc.74-20347 Filed 9-4-74;8:45 am]

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CHAPTER II—NATIONAL MARINE FISHERIES SERVICE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, DEPARTMENT OF COMMERCE

PART 216—MARINE MAMMALS

Incidental Taking in the Course of Commercial Fishing Operations

Regulations entitled "Incidental Taking in the Course of Commercial Fishing Operations," Part 216 of Chapter II, Title 50 of the Code of Federal Regulations were published in the FEDERAL REGISTER (39 FR 32117) on Thursday, September 5, 1974, to become effective on September 30, 1974. As provided in said publication, "Modifications of these regulations prior to the effective date, to the extent such modifications are necessary and permissible, will be announced in the FEDERAL REGISTER." It has been determined that the following modifications are necessary and permissible in order to carry out the intent of the regulations.

The following changes are made in the September 5, 1974 regulations:

1. Section 216.24 is amended by adding the word "serious" before the word "injury" in paragraph (e)(2) and adding paragraphs (e)(2)(i), (e)(4), (5), and (6) as follows:

2. The addition of "serious" to "injury" more accurately reflects the wording of the Act. Paragraph (e)(2)(i) implements the determination by the Director that only yellowfin tuna, salmon, halibut, and pilchards from South Africa have been found, at this time, to be involved with commercial fishing operations which cause the death or serious injury of marine mammals. Section 216.24(e)(2) may be amended by adding or deleting fish as available information supports subsequent determinations. Paragraphs (e) (5) and (6) provide for a bonding procedure consistent with Customs procedures for the importation of fish lacking adequate documentation or certification at the time of importation.

§ 216.24 Taking and related acts incidental to commercial fishing operations.

* * * * *

(e) * * *

(2) * * * serious injury * * *

(i) All fish, except yellowfin tuna; salmon; halibut; and pilchards from South Africa. The following U.S. Tariff Schedule Item Numbers identify these categories of yellowfin tuna, salmon, halibut, and pilchard products which are imported into the United States and are to be covered by the documentation and certification requirements of § 216.24(e):

110.10–20	Tuna, yellowfin, whole fish.
110.10–25	Tuna, yellowfin, eviscerated, head on.
110.10–30	Tuna, yellowfin, eviscerated, head off.
110.10–37	Tuna, yellowfin, eviscerated.
110.20–25	Halibut, fresh or chilled.
110.20–30	Halibut, frozen.
110.20–45	Salmon, fresh or chilled.
110.20–50	Salmon, frozen.
110.70–40	Halibut, other—except portion controlled steaks.
111.48–00	Salmon, salted.
111.88–00	Salmon, smoked or kippered.
112.18–00	Salmon, preserved, not in oil.
112.20–00	Canned sardines/pilchards, [from S. Africa].
112.22–00	Canned sardines/pilchards, [from S. Africa].

* * * * *

(4) *Fish refused entry.* If fish is denied entry under the provisions of § 216.24(e)(3), the district director of Customs shall refuse to release the fish for entry into the United States and shall issue a notice of such refusal to the importer or consignee.

(5) *Release under bond—Provided however,* That fish not accompanied or covered by the required documentation or certification when offered for entry may be entered into the United States if the importer or consignee gives a bond on Customs Form 7551, 7553, or 7595 for the production of the required documentation or certification. The bond shall be in the amount required under 19 CFR 25.4(a). Within 90 days after such Customs entry, or such additional period as the district director of Customs may allow for good cause shown, the importer or consignee shall deliver a copy of the required documentation or certification to the district director of Customs, and an original of the required documentation or a copy of the certification to the regional director of the National Marine Fisheries Service, unless the district director of Customs has received notification from the National Marine Fisheries Service that the fish is covered by a certification. If such documentation, certification, or notification is not delivered to the district director of Customs for the port of entry of such fish within 90 days of the date of Customs entry or such additional period as may have been allowed by the district director of Customs for good cause shown, the importer or consignee shall redeliver or cause to be redelivered to the district director of Customs those fish which were released in accordance with this paragraph. In the event that any such fish is not redelivered within 5 days following the date specified in the preceding sentence, liquidated damages shall be assessed in the full amount of a bond given on Form 7551. When the transaction has been charged against a bond given on Form 7553 or 7595, liquidated damages shall be assessed in the amount that would have been demanded under the preceding sentence under a bond given on Form 7551. Fish released for entry into the United States through use of the bonding procedure provided in this paragraph shall be subject to the civil and criminal penalties and the forfeiture provisions provided for under the Act if (i) the required documentation or certification is not delivered to the regional director of the National Marine Fisheries Service within 90 days of the date of Customs entry, or such additional period as may have been allowed by the district director of Customs for good cause shown, or (ii) the required certification is not on file in the office of the Director, National Marine Fisheries Service, Washington, D.C. 20235, within this 90 day period or such additional period as may have been allowed by the district director of Customs for good cause shown. Fish refused entry into the United States shall also be subject to the civil and criminal penalties and the forfeiture provisions provided for under the Act.

(6) *Disposition of fish refused entry into the United States; redelivered fish.* Fish which is denied entry under § 216.24(e)(3) or which is redelivered in accordance with § 216.24(e)(5) and which is not exported under Customs supervision within 90 days from the date of notice of refusal of admission or date of redelivery shall be disposed of under Customs laws and regulations. *Provided however,* That any disposition shall not result in an introduction into the United States of fish in violation of the Marine Mammal Protection Act of 1972.

Dated: September 20, 1974.

JOSEPH W. SLAVIN,
Acting Director, National Marine Fisheries Service.

[FR Doc.74–22193 Filed 9–24–74;8:45 am]

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